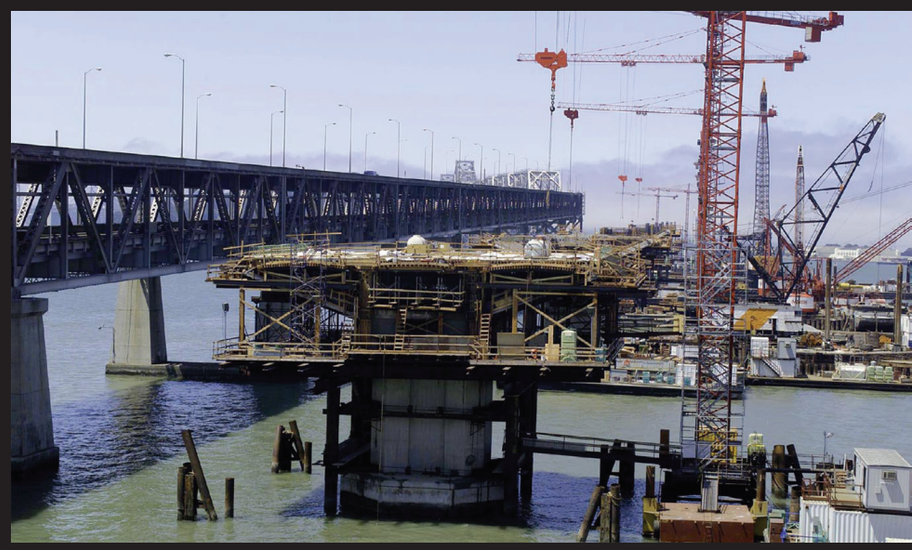
Toll Bridge Program Oversight Committee Meeting Materials

July 27, 2006



Caltrans

BAY AREA TOLL AUTHORITY

STATE OF CALIFORNIA
CALIFORNIA TRANSPORTATION COMMISSION

TOLL BRIDGE PROGRAM
OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Letter of Transmittal

TO: Toll Bridge Program Oversight Committee (TBPOC)

DATE: July 24, 2006

FR: Program Management Team (PMT)

RE: TBPOC Meeting Materials Binder – July 27, 2006

Attached is the TBPOC Meeting Materials Binder for the July 27th meeting. The binder includes memoranda and reports that will be presented at the meeting. A Table of Contents is provided following the Agenda to help locate specific topics. Items that are to be included after the mail-out will be printed on blue paper.

TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

FINAL AGENDA

July 27, 2006, 10:00 AM - 12:00 Noon

The Claremont Conf. Rm., MTC Office, 101 Eighth[th] St., Oakland

Topic	Presenter	Time	Desired Outcome
1. Chair's Report	W. Kempton, Caltrans	5 min	Information
2. Monthly Progress Report			
a) Draft July 2006 Monthly Progress Report***	A. Fremier, BATA	2 min	Approval
b) Delegated Approval Items*/ Delegation of Monthly Approval	A. Fremier, BATA	2 min	Approval
3. Quarterly Report			
a) Protocol for Program Budget/ Schedule Forecast Changes	T. Anziano, Caltrans	10 min	Approval
b) Draft 2nd Quarter Report Ending June 30, 2006**	T. Anziano, Caltrans	5 min	Information
c) Program Oversight Cost Reporting in Quarterly Report	T. Anziano, Caltrans	5 min	Approval
4. Program Issues			
a) Update on Concrete Supplier	T. Anziano, Caltrans	5 min	Information
5. West Approach			
a) 8U Bridge Closure Update	T. Anziano, Caltrans	10 min	Information
6. SFOBB East Span Skyway Contract			
a) Closeout Strategy*	T. Anziano, Caltrans	20 min	Approval
7. South/South Detour Contract			
a) Update	T. Anziano, Caltrans	10 min	Information
8. Other Business	W. Kempton, Caltrans		Information

Next Meeting: Thurs., August 24, 2006, 1:00 - 3:00 PM, Director's Conference Room, Caltrans, 1120 N Street, Sacramento, CA

* Attachments

** Final Documents still in process; to be provided as soon as available.

*** Stand alone document included in the binder.

TOLL BRIDGE PROGRAM
OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

TABLE OF CONTENTS – TBPOC MEETING, July 27, 2006

* Attachments
** Final Documents still in process; to be provided at the meeting.
*** Stand alone document included in the binder.

AGENDA ITEM 1: Chair's Report

NO ATTACHMENTS

TOLL BRIDGE PROGRAM
OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Memorandum

TO: Toll Bridge Program Oversight Committee (TBPOC) **DATE:** July 24, 2006

FR: Andrew Fremier, Deputy Executive Director, Bay Area Toll Authority (BATA)

RE: Agenda No. - 2a

Item- Monthly Progress Report
Draft July 2006 Monthly Progress Report

Cost:
N/A

Schedule Impacts:
N/A

Recommendation:
Approval

Discussion:
BATA requests approval of the July 2006 Monthly Progress Report. An updated version of the attached will be e-mailed to the TBPOC upon receipt of updated financial data, no later than Wednesday morning, July 26th.

Attachment(s):
Draft July 2006 Monthly Progress Report

TOLL BRIDGE PROGRAM
OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Memorandum

TO: Toll Bridge Program Oversight Committee (TBPOC) **DATE:** July 24, 2006

FR: Andrew Fremier, Deputy Executive Director, Bay Area Toll Authority (BATA)

RE: Agenda No. - 2b

Item- Monthly Progress Report
Delegated Approval Items/Delegation of Monthly Approval

Cost:
N/A

Schedule Impacts:
N/A

Recommendation:
Approval

Discussion:
BATA will present, for information, the PMT memo to the TBPOC File recording the TBPOC's June 2006 approval items as delegated through their respective PMT members.

Furthermore, BATA requests that TBPOC members delegate to their respective PMT representatives approval authority of future monthly progress reports, after appropriate reviews, beginning with the August 2006 Monthly Progress Report.

The TBPOC will continue to receive drafts of the monthly reports for review and comment.

Attachment(s):
Memo to TBPOC File

TOLL BRIDGE PROGRAM
OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Memorandum

TO: Toll Bridge Program Oversight Committee File (TBPOC)

DATE: July 11, 2006

FR: Program Management Team (PMT)

RE: Delegated Items Approved by the PMT

The following were approved by the TBPOC through their respective PMT members on June 29, 2006:

1) May 31, 2006 TBPOC Meeting Minutes
2) June 2006 Monthly Progress Report
3) Plans, Specifications & Estimate (PS&E) for the Richmond-San Rafael Bridge Public Access Contract

Attachments:

1) May 31, 2006 TBPOC Meeting Minutes
2) June 2006 Monthly Progress Report - on file
3) Richmond-San Rafael Bridge Seismic Retrofit – Revised Exhibit A Public Access Contract

TOLL BRIDGE PROGRAM
OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

MEETING MINUTES
May 31, 2006, 10:00 AM – 12:00 Noon
The Claremont Conference Room, MTC Office
101 8th St, Oakland, CA

Attendees: TBPOC Members: Randy Iwasaki for Will Kempton, Steve Heminger, John Barna; PMT Members: Tony Anziano, Andy Fremier, Stephen Maller; Participants: Andre Boutros, Pochana Chongchaikit, Beatriz Lacson, Peter Lee, Brian Maroney, Alec Melkonians, Brady Nadell, Bart Ney, Steve Quinn, Judis Santos, Bijan Sartipi, Pete Siegenthaler, Jon Tapping, Ken Terpstra, Dennis Turchon, Maura Twomey, Karen Wang, Jason Weinstein

Convened: 10:10 AM

Items	TBPOC Decision/Direction
1. Chair's Report • Randy Iwasaki, acting for the Chairman, welcomed the participants to the MTC Office.	
2. Consent Calendar • BATA presented the April 18, 2006 Meeting Minutes for approval.	• The TBPOC **APPROVED** the April 18, 2006 Meeting Minutes.
3. Monthly Progress Report • BATA presented the Draft May 2006 Progress Report for approval.	• The TBPOC **APPROVED** the May Monthly Progress Report with minor edits. • Per BATA, after review of the April 2006 Monthly Progress Report, the TBPOC **APPROVED** the report on May 2, 2006 through their respective PMT member. • The TBPOC **APPROVED** the First Quarter Report Ending March 31, 2006 on May 14, 2006 through their respective PMT member.

Items	TBPOC Decision/Direction
4. Yerba Buena Island Transition (SSD) a) Presentation of Alternatives / Recommendation on Preferred Alternative • The Department presented the following alternatives: o Alternative 1 – "stay-the-course", move forward with current alignment for YBITS and current plan for a double-deck eastbound and westbound SSD. o Alternative 2a – Modified YBITS alignment with single-deck eastbound detour and permanent westbound structure. o Alternative 2b – Modified YBITS alignment with two-way traffic, no detour structure. • In addition, the Department did an analysis of a complete bridge closure option, rather than using a detour structure. Given the length of time required to close the bridge (24 months westbound; 30 months eastbound), this proved not to be a viable option. • The Committee discussed the risks, pros and cons associated with each alternative. • The Department reported that a detour structure can be safely constructed, but a roll-out/roll-in design strategy must be pursued as part of Alternative 1. • The Department presented several construction strategies for tying in the SSD Viaduct to the existing bridge. • The Department analyzed all three options and brought to the meeting extensive supporting documents (constructability reviews, etc.).	• The TBPOC agreed that roll-out/roll-in is the preferred SSD Viaduct east tie-in strategy.

Items	TBPOC Decision/Direction
• The Department and BATA recommended approval for Alternative 1. The CTC recommended Alternative 2a.	• The TBPOC **APPROVED** moving forward with Alternative 1 (2:1 in favor). • CTC TBPOC member John Barna voted for Alternative 2a.
• The Department confirmed that the SSD structure is being designed and constructed to seismic standards that meet or exceed those of the existing SFOBB east span.	• The TBPOC requested a contingency plan be developed in case the SSD alternative encounters insurmountable construction difficulties.
• The Department recognized Brady Nadell (PB), Jason Weinstein (BATA), Brian Maroney (CT), Jon Tapping (CT) and Judis Santos (HNTB) for their efforts in putting together the YBITS / SSD Information Packet.	
5. West Approach a) June 2006 8U North Demolition and Traffic Split • The Department presented the results of the quantitative review of the impacts of switching the westbound I-80 traffic pattern from the current configuration to the mainline "split" configuration scheduled to happen on June 3, 2006.	• A request was made to provide a traffic operation analysis to compare what the travel times were before and after the detour at the next meeting.
• It was determined that the presence of the "comeback" lane is needed to increase the mainline capacity.	
• The Public Information Officer gave a status of the public, legislative and media outreach efforts achieved to date. o Met with 18 legislators. o The website baybridgeinfo.org - 620,000 hits to date, approximately 20,000 hits/day. o Greatly increased public service announcements via radio, television, newspapers, and video showings at theatres.	

Items	TBPOC Decision/Direction
o Four different banners displayed at the Toll Plaza, Yerba Buena Island, and Transbay Terminal. o Media alert, e-mail alert, and newsletter made available. o Flyers distributed at Yerba Buena Alliance meetings to target businesses. b) Contingency Plan • The Department summarized the multi-modal transportation response to a catastrophic seismic event or major construction incident that might result in an SFOBB closure. • The Committee asked if there was a plan to restore traffic if there is an event that makes the existing span inoperative, and to repair the existing span while the new one is being constructed. o The Department described a typical response to an emergency situation. o The Department developed emergency scenarios (4) for the San Mateo-Hayward Bridge that may apply.	• The Department to provide a contingency/emergency response plan for situations, such as: o SFOBB is out of service. o Both SFOBB and BART are inoperative.
6. Dumbarton/Antioch Bridges a) Status Update • The Department provided an update on the studies which are expected to produce retrofit strategies for both bridges. • It was recommended that a subset of TBPOC be created for the issues involving Dumbarton/Antioch Bridges, given that the TBPOC is not mandated to act or make decisions on them.	• CTC requests clarification on TBPOC's involvement with the Dumbarton and Antioch Bridges.
7. Other Business • A framed memento commemorating the	

(continued)

Items	TBPOC Decision/Direction
7. Other Business • A framed memento commemorating the signing of the SAS contract award was presented to each TBPOC member. • The next TBPOC meeting is tentatively scheduled for June 22nd in Sacramento.	• Confirm TBPOC June meeting date, time and location.

Adjourned: 12:06 PM

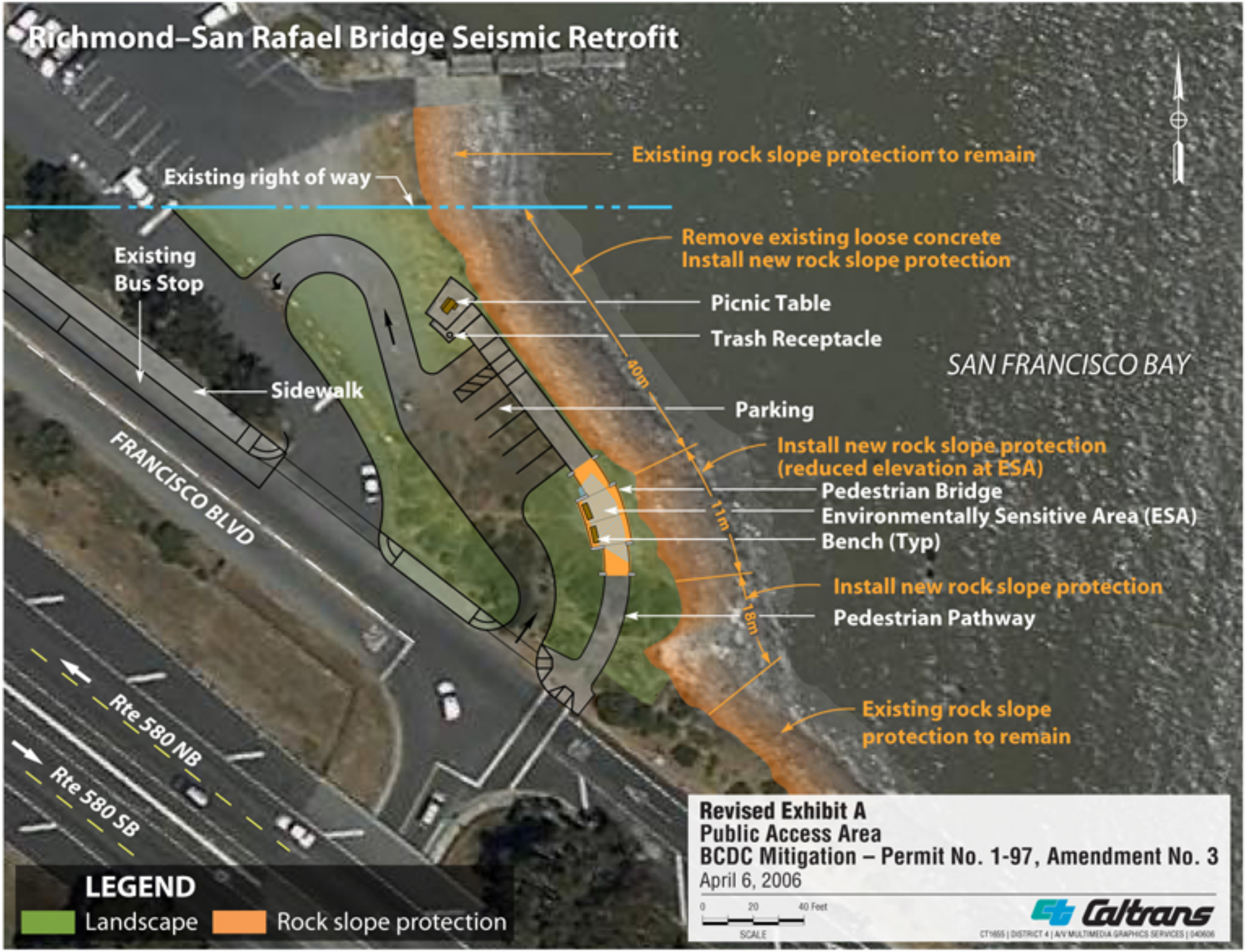
MEETING MINUTES
May 31, 2006, 10:00 AM – 12:00 Noon
The Claremont Conference Room, MTC Office
101 8th St, Oakland, CA

APPROVED BY:

For
WILL KEMPTON, Director
California Department of Transportation
7/11/06
Date

For
JOHN F. BARNA, Jr., Executive Director
California Transportation Commission
7/11/06
Date

STEVE HEMINGER, Executive Director
Bay Area Toll Authority
7/11/06
Date


Richmond–San Rafael Bridge Seismic Retrofit
Existing rock slope protection to remain
Existing right of way
Remove existing loose concrete
Install new rock slope protection
Existing
Bus Stop
Picnic Table
Trash Receptacle
SAN FRANCISCO BAY
40m
Sidewalk
Parking
FRANCISCO BLVD
Install new rock slope protection
(reduced elevation at ESA)
Pedestrian Bridge
11m
Environmentally Sensitive Area (ESA)
Bench (Typ)
Install new rock slope protection
18m
Pedestrian Pathway
Rte 580 NB
Rte 580 SB
Existing rock slope
protection to remain
LEGEND
Landscape
Rock slope protection
Revised Exhibit A
Public Access Area
BCDC Mitigation – Permit No. 1-97, Amendment No. 3
April 6, 2006
0
20
40 Feet
SCALE
Caltrans
CT1655 | DISTRICT 4 | A/V MULTIMEDIA GRAPHICS SERVICES | 040606

TOLL BRIDGE PROGRAM
OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Memorandum

TO: Toll Bridge Program Oversight Committee (TBPOC) **DATE:** July 24, 2006

FR: Tony Anziano, Caltrans Toll Bridge Program Manager

RE: Agenda No. - 3a

Item- Quarterly Report
Protocol for Program Budget/ Schedule Forecast Changes

RECOMMENDATION:

The following protocol for revisions to forecast cost data has been developed. A revision to forecast cost will be recommended when the following criteria have been established:

1. The cost revision relates to
   a. a risk event identified in the most recent Risk Management Plan as a risk of high probability or greater, or
   b. an approved Contract Change Order;
2. The cost revision results in a change of greater than five percent of the current budget for the contract; and
3. The cost revision will be realized within the next 12 months.

No specific criteria are being recommended at this time for revisions to forecast schedule.

Memorandum

DISCUSSION:

Background

During prior discussions regarding changes to forecast cost information contained in the Toll Bridge Seismic Retrofit Program Quarterly Report, the Toll Bridge Program Oversight Committee (TBPOC) has noted that there are no formal criteria to assess the basis for and merits of suggested changes to forecast cost data. The TBPOC requested that formal criteria be developed to support future revisions to forecast cost data. The Department developed the criteria discussed in this memo in response to this request. In the course of developing such criteria, the Department also noted the potential need for similar criteria to assess potential revisions to forecast schedule. The Department is considering schedule criteria and will bring a recommendation back to the TBPOC within the next two months.

The criteria contained in this memorandum have been reviewed by the Project Management Team (PMT), and the PMT concurs with the recommendation set forth above.

Analysis

There are a number of factors that have the possibility to influence cost for any given contract. These factors are generally captured in the Risk Management Plan (RMP) and each factor is assigned to a category of probability of occurrence. The categories run from Very Low (0 to 20% probability) to Very High (80 to 100% probability). Probability is reassessed on a quarterly basis and adjusted as needed. Tying forecast cost revisions to the highest two categories – High (60 to 80% probability) and Very High means that the cost issue in question is more likely than not to occur and therefore should be captured in the quarterly report.

Memorandum

However this should be tempered by the time period in which the issue is likely to occur. An identified high risk that is likely to occur in 2 years may be reduced to a lower level risk through effective risk management. An immediate high risk is less amenable to risk management and more likely to be realized. Finally, only significant associated cost revisions should be captured – if minor revisions are captured, the forecast cost will be an ever-changing amount and difficult to manage. Significant cost revisions are more meaningful from a budget perspective. Five percent is a reasonable threshold that should capture changes of concern.

In addition to use of the RMP, it is possible that a cost issue may arise that is not identified in the RMP. If it will have immediate cost implications it is likely to appear in the form of a Contract Change Order (CCO). Accordingly, the protocol incorporates CCOs as an independent basis for forecast cost revisions, but again subject to the five percent threshold.

This approach is of significance beyond the specific assignment of developing forecast cost revision criteria - it represents the first step in directly integrating the RMP into program management decision-making.

Attachment(s):
None

TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Memorandum

TO: Toll Bridge Program Oversight Committee (TBPOC) **DATE:** July 24, 2006

FR: Tony Anziano, Toll Bridge Program Manager, Caltrans

RE: Agenda No. - 3b

Item- Quarterly Report
Draft 2nd Quarter Report Ending June 30, 2006

Cost:
N/A

Schedule Impacts:
N/A

Recommendation:
For Information Only

Discussion:
Attached is the 2nd Quarter 2006 Report Schedule. A Proposed Final Draft of the 2nd Quarter Report Ending June 30, 2006 will be e-mailed to the TBPOC by COB Tuesday, July 25th, or as soon as actual cost data through June 30, 2006 is available.

Attachment:
2nd Quarter 2006 Report Schedule

TOLL BRIDGE PROGRAM
OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

2nd Quarter 2006 Report Schedule

Action	Deadline for Action	Actually Compl. (A)
2nd Quarter 2006 Report: Legislated Deadline - August 14, 2006		
BAMC Prepare Quarterly Report 1st Draft for PMT, BATA, Caltrans	July 11, 2006	A
PMT / BATA / Caltrans Review & Comment on 1st Draft	July 14, 2006	A
BAMC Incorporate Comments: Produce 2nd Draft for TBPOC Review	July 17, 2006	A
TBPOC Review & Comment on 2nd Draft	July 21, 2006	A
Expenditure Update	July 25, 2006	A
BAMC Incorporate Comments; Produce Proposed Final Draft for TBPOC and Agency	July 25, 2006	A
BAMC Issue Proposed Final Draft to TBPOC & Agency	July 25, 2006	A
TBPOC and Agency Review / Comment on Proposed Final Draft	August 1, 2006	
BAMC Incorporate Comments: Produce Advanced Final Draft + Table of Conflicting Comments	August 3, 2006	
TBPOC Teleconference to make Final Comments and Resolve Conflicting Comments	August 4, 2006	
BAMC Incorporate All Final Comments from TBPOC; Emails Final Version for Information	August 8, 2006	
Produce & Issue Quarterly Report to Legislature & CTC	August 11, 2006	

Memorandum

TO: Toll Bridge Program Oversight Committee (TBPOC) **DATE:** July 24, 2006

FR: Tony Anziano, Caltrans Toll Bridge Program Manager

RE: Agenda No. - 3c

Item- Quarterly Report
Program Oversight Cost Reporting in Quarterly Report

RECOMMENDATION:

Program oversight cost reporting should be limited at this time to clearly identifiable costs that are associated with the operation of the Toll Bridge Program Oversight Committee. Further efforts should be taken to insure each member agency has controls in place to identify such costs for inclusion in the quarterly report and as a basis for reimbursement from toll revenues.

DISCUSSION:

Background

Assembly Bill 144 (AB 144) of 2005 establishes the requirement of submission of a quarterly report for the Toll Bridge Seismic Retrofit Program to the State Legislature. AB 144 specifically requires that the quarterly report include "A summary of the expenses incurred by the Toll Bridge Program Oversight Committee to perform the duties required by {AB 144} …" To date, such expenses have not been reported in the quarterly report. The most recent quarterly report for the first quarter of 2006 assured reporting of this information in the second quarter report:

Memorandum

> "At present, the member agencies of the TBPOC are developing actual and expected expenditures for their work activities related to the TBPOC. During the Second Quarter of 2006, the TBPOC will develop the processes and procedures for budgeting and reimbursing each agency for costs related to their participation on the TBPOC."

The Project Management Team (PMT) concurs with the recommendation set forth above.

Analysis

To date, the only clearly identifiable costs associated with operation of the TBPOC relate to the cost of consultant support provided to the PMT and TBPOC by HNTB and Bay Area Management Consultants and California Transportation Commission staff costs. These costs can be reported in the second quarter report. The Department is reviewing staff costs to determine the amount of TBPOC related work, but analysis needs to be done by member agencies to assure all agencies that this accurately captures time specifically dedicated to TBPOC activities. The TBPOC will receive another report on this issue prior to the issuance of the third quarter report.

Attachment(s):
None

TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Memorandum

TO: Toll Bridge Program Oversight Committee (TBPOC) **DATE:** July 24, 2006

FR: Tony Anziano, Toll Bridge Program Manager, Caltrans

RE: Agenda No. - 4a
Item- Program Issues
Update on Concrete Supplier

Cost:
N/A

Schedule Impacts:
N/A

Recommendation:
For Information Only

Discussion:
The Department will present a verbal update on the Concrete Supplier issue.

Attachment(s):
None

Memorandum

TO: Toll Bridge Program Oversight Committee (TBPOC) **DATE:** July 24, 2006

FR: Tony Anziano, Caltrans Toll Bridge Program Manager

RE: Agenda No. - 5a

Item- West Approach
8U Bridge Closure Update

RECOMMENDATION:
For Information Only

DISCUSSION:

Background

The final major demolition activity for the West Approach Project involves the partial demolition (top deck and upper columns) of Frames 7U(S) and 8U(S). This will require closure of the eastbound SFOBB during demolition. Demolition will be occurring in proximity to residential buildings and there will be noise as well as traffic impacts. This activity was originally scheduled to last six to nine weekends in the mid-August through October 2006 period. The Department and Contractor have developed a strategy to accomplish the demolition of these two quadrants, as well as four additional spans, during a three day period. This will require either two weekends or one three-day (holiday) weekend. The Department has reviewed traffic data and event planning for the mid-August through October 2006 period and has determined that the use of Labor Day weekend for the operation as this weekend presents the best opportunity to minimize traffic and noise impacts.

Memorandum

Analysis

The use of Labor Day weekend for the demolition will allow completion of work in a single continuous three day period. Labor Day traffic is less than or approximately equal to traffic on other weekends in this period and Monday volumes on the third day of the holiday weekend tend to be significantly less than a normal Saturday or Sunday. No major events are occurring during Labor Day weekend. If two regular weekends are used instead, major events such as San Francisco 49ers and Giants games, Fleet Week, the Columbus Day Parade, the Bridge to Bridge Run (6,500 participants and associated city street traffic control and closures), the Treasure Island Dragon Boat Race (2,500 participants with additional spectators) and Oracle World (the 4th largest convention in San Francisco) will be occurring (there are no consecutive weekends without major events – in fact only one weekend other than Labor Day weekend is without any major event, the weekend of October 28-29). Concerns with events have led CCSF staff to indicate that they would not support any weekend work during the mid-August through October period other than Labor Day. CCSF staff have been consulted and do support the use of Labor Day weekend. If Labor Day weekend is not utilized, CCSF staff have requested that the work be performed beginning at the end of October and into November at the earliest.

In summary, benefits of the Labor Day option are:

> Traffic – Impacts will be minimized. Saturday and Sunday volumes on Labor Day weekend are equal to or less than other weekends. Monday volumes on Labor Day itself are significantly less than a normal Saturday or Sunday. No major events are planned for the weekend. Closures will be scheduled to begin after the pre-season San Francisco 49ers game scheduled for Friday evening. All other weekends in September and October have major events planned, including San Francisco 49ers and Giants games, Fleet Week, Bridge-to-Bridge, the Oracle event

(encompassing two weekends), and the Dragon Boat races on Treasure Island;

Schedule – Completion of the demolition work early in the mid-August through October period will advance completion of the West Approach project; and

Noise - Neighboring residents and businesses have been informed of the options and prefer the work to be done in one weekend. This allows the period of disruption to be confined to a single consecutive three day period.

The use of Labor Day weekend for demolition will require more geographically extensive public outreach given travel typical to this weekend. Outreach will begin immediately and will include the Bay Area as well as the Sacramento, San Joaquin/Central Valley and Santa Cruz regions. Outreach will focus on key traffic and schedule benefits and will include:

Extensive public service announcements in targeted media outlets, including major local and regional newspapers, radio and television outlets, and movie theaters;

Distribution of fact sheets detailing the closures with detour maps, and emphasizing transit alternatives. Fact sheets will be disseminated by e-mail twice to a set of contacts across the Bay Area Region and by hardcopy to various stakeholders, including Treasure Island residents, San Francisco International Airport, Oakland Airport, San Jose Airport, Sacramento Airport, all car rental agencies, hotels, charter transportation companies, goods movement companies, taxi companies, concert, tourist and event venues. Because of the importance of the holiday weekend, this effort has been expanded to a distribution of 300,000 Fact Sheets, increased from the 100,000 disseminated during the June 2006 closures;

Fixed Changeable Message Signs (CMS) in Districts 1, 3, 4, 5 and 10 will be used for outreach and will begin broadcasting closure notification two weeks prior to Labor Day weekend;

Presentations and distribution of information to local residential and commercial stakeholders;

Continued use of the popular baybridgeinfo.org website;

Coordination with the California Division of Tourism; and

Extensive outreach to key local agencies and officials, incorporating presentations.

A mitigation plan has been developed and key agencies have been consulted to insure that the plan can be successfully be implemented on a holiday weekend. Mitigation will again include the following:

Extended 24-hour Bay Area Rapid Transit (BART) service through 1:00 am Tuesday. BART has acknowledged difficulties in increased staffing during a holiday weekend but has indicated that the issue has been thoroughly analyzed and BART is committed to provision of the extended service;

California Highway Patrol (CHP) will provide necessary support. Labor Day weekend is a Maximum Enforcement Period and generally requires 80 percent of CHP staff to be on duty. CHP is assessing the steps necessary to shift enforcement personnel to traffic control at needed locations;

CCSF will staff the weekend with all necessary Parking Control Officers;

Memorandum

Regional traffic issues will be addressed, such as improved signal phasing at key locations, additional toll collection staffing at other bridges, etc.;

Emergency services will be granted access across the SFOBB throughout the weekend;

The 511 system will add a "floodgate" message on its network. The 511 Transit Planning system will also incorporate the revised transit schedules in effect over the holiday weekend;

Informational banners will be displayed at the SFOBB Toll Plaza, the Yerba Buena Island Tunnel portal (westbound I-80), and two banners at the Transbay Transit Terminal Building, targeting both eastbound and westbound motorists; and

Fixed CMS units in Districts 1, 3, 4, 5 and 10 will continue to broadcast information and will be supplemented with at least 40 portable CMS units that will be deployed throughout the area advising motorists of detours and closures and recommending alternate routes.

This concept has been presented to the TBPOC during the past week. TBPOC members indicated that the use of Labor Day weekend for the demolition work is acceptable but all noted the sensitivity of the weekend and have directed that care be taken with the outreach effort. Outreach activities have already begun. It should be noted that motorists leaving town for the holiday weekend will be able to cross the Bridge eastbound through Friday evening, and the upper deck (westbound) traffic into the City will be unimpeded during this weekend.

Attachment(s):
None

TOLL BRIDGE PROGRAM
OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Memorandum

TO: Toll Bridge Program Oversight Committee (TBPOC) **DATE:** July 24, 2006

FR: Tony Anziano, Caltrans Toll Bridge Program Manager

RE: Agenda No. - 6a

Item- SFOBB East Span Skyway Contract Closeout Strategy

RECOMMENDATION:

The Skyway Contract has a number of open cost and schedule issues. The Department is recommending that the Department be provided with tentative Contract Change Order approval in an amount not to exceed $95,000,000.00 while finalizing negotiations with the Contractor for a major Contract Change Order that will provide resolution of all critical issues. The Department will bring a final Contract Change Order back to the Toll Bridge Program Oversight Committee (TBPOC) for consideration at the August 2006 meeting.

DISCUSSION:

Background

There are a large number of unresolved issues between the Department and the Contractor for the Skyway Contract. The current settlement proposal resolves indirect (Time Related Overhead or TRO) costs for all of these issues and direct costs for all issues except one. This issue relates to the direct costs associated with fabrication of the two steel deck sections that will connect the Skyway to the SAS. These direct costs are not included due to a continuing lack of documentation from the fabricator substantiating their direct cost claim. The claim for these direct costs is likely to be substantial, and the Department has

requested that the Contractor attempt to provide information so that this settlement can close out all major issues. It is possible that this may occur and can be brought to the TBPOC in August – however, if this does not occur the Department believes that it is prudent to move forward without this direct cost item.

The current settlement proposal has been reviewed by consultants to both the Department and the Bay Area Toll Authority and all consultants concur with the approach taken by the Department as have found the dollar amount currently proposed to be within a reasonable range for resolution.

The Project Management Team (PMT) concurs with the recommendation set forth above.

Analysis

A detailed summary and analysis of the proposed settlement is in the attached draft Claim Settlement Report. The Contractor's demand for all items is $162 million. The tentative target for resolution is $94 million. This is within current budget and leaves room for resolution of the direct cost issue associated with the steel deck sections while still remaining within budget. The draft Claim Settlement Report does consider and quantify alternative resolutions such as removal of non-critical items from the current contract to minimize exposure to indirect costs (rebidding and constructing the items under separate contract with lower indirect costs), but the report concludes that the proposed settlement is the best option on balance.

Resolution of these outstanding issues will provide several significant benefits:

1. This will help assure on schedule delivery of the E2 T1 Contract. Resolution of the Hinge Pipe Beam issue is included in the settlement. The Hinge Pipe Beams are being fabricated by Transbay Steel (TBS).

Memorandum

Difficulties with fabrication have delayed production at TBS, and a Dispute Resolution Board has found the Department to be responsible for the majority of these difficulties. TBS is also fabricating piles and pile casings for the E2 T1 Contract, and delays associated with the Skyway Hinge Pipe Beams have impacted fabrication of the E2 T1 piles. The settlement will provide incentive and resources for resolution of the production issues. This is critical as delay to the E2 T1 Contract will have a negative spillover impact to the SAS contract schedule almost immediately. The Department has requested, and the Contractor has provided, a clear strategy to resolve production issues that will be implemented upon resolution of outstanding issues. The Department has also indicated to the Contractor that the settlement (as currently proposed) will have to include settlement of all indirect cost issues associated with TBS for both the Skyway and E2 T1 Contracts.

2. The proposed settlement will also provide a needed schedule adjustment for the Skyway Contract. The current schedule is unrealistic. A realistic completion date, agreed to by the Contractor, will assist in making needed corrections to the overall corridor schedule.
3. The proposed settlement will help resolve the majority of identified risks to the Skyway Contract in the current Risk Management Plan.
4. The proposed settlement provides for a significantly reduced TRO amount for the last five months of work, assuming a December 2007 completion date. Contractually, TRO remains fixed through 1149 working days, which would not occur until 2008. This in effect provides a new incentive for prompt completion of work.

Attachment(s):

1) Draft Claim Settlement Report #2
2) DRB Recommendations NOPC #7
3) DRB Recommendation, NOPC #11
4) Draft Skyway Contract 04-012024 Budget Analysis, June 27, 2006

Memorandum

******CONFIDENTIAL DRAFT******

To: Richard Land,
Deputy Director Project Delivery

Date: July 14, 2006

Attn: Bob Pieplow
Program Manager, Construction

File: 04-012024
04-SF, ALA-80-13.9/14.3,0.0/1.6
SFOBB Skyway Project

From: **DEPARTMENT OF TRANSPORTATION**
Tony Anziano
Toll Bridge Program Manager

Subject: REQUEST FOR SETTLEMENT APPROVAL - Claim Settlement Report #2

EXECUTIVE SUMMARY:

The District/Toll Bridge Program, hereinafter called the District, hereby requests approval to resolve several disputes and outstanding changes associated with contract 04-012024, hereinafter referred to as the Skyway contract. These disputes include design change delays, and fabrication delays (except Universal Structural Inc.'s NOPCs). The proposed settlement provides a 220 working day contract extension resolving all known and anticipated contract time impacts.

PROJECT DESCRIPTION:

The Skyway project replaces a portion of the SFOBB East Span constructed in 1937. The new project consists of two parallel, 2.1 km long structures designed to accommodate five lanes of traffic in each direction, plus left and right shoulders. The new bridges consist of pre-cast segmental concrete box girders, utilizing the balanced cantilever construction method, for a total of four rigid frames with fourteen piers per structure. Two steel orthotropic box girders (OBG) attach to the western end of each bridge to provide a transition to the future Self-Anchored Suspension span. A bikepath is also being constructed on the south side of the eastbound structure. This project was awarded to the low bidder, Kiewit/FCI/Manson (KFM), a Joint Venture, on January 17, 2002. The original bid amount was $1,043,541,000.00.

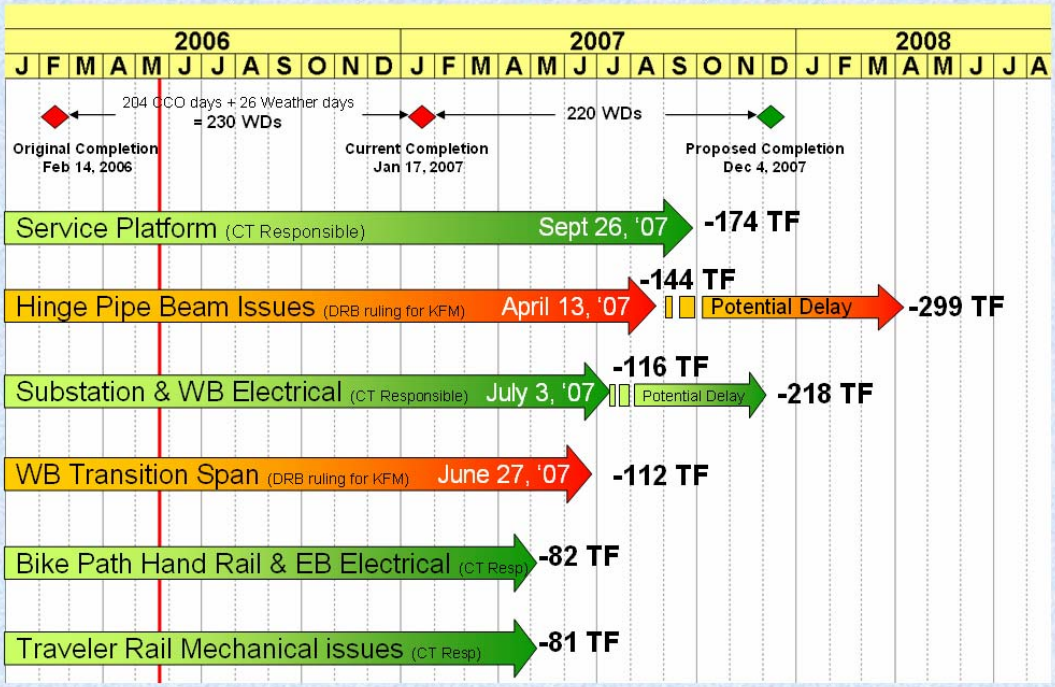
Contract Dates	**Date**	**Number of Days**
Contract Approval Date	01/22/02	
First Working Day	02/06/02	
Working Days Specified in Contract		1000
Original Computed Date of Completion	02/14/06	
Time Extension Days Approved to Date		204
Non Working Days to Date (Weather Days)		26
Extended Date of Completion	01/17/2007	
Proposed Date of Completion (Alternative A)	12/04/2007	

BACKGROUND:

Although the East Span Skyway project is currently 91% complete, several major impacts remain unresolved and the current approved contract completion date of January 17, 2007, cannot be attained. Providing a timely contract time extension associated to resolve disputes for which the State carries significant exposure is appropriate and cost-effective in order to avoid escalation of claims and constructive acceleration impacts. The following Figure 1 shows a number of activities delaying the project completion date. The Department has acknowledged responsibility for certain delays associated with service platforms, substation and westbound electrical, bikepath hand rail, and travel rail mechanical impacts. At this time, the Department has not accepted responsibility for any delays associated with hinge pipe beam fabrication and transition span welding impacts, despite the Dispute Review Board (DRB) finding in favor of the Contractor for both issues.

Figure 1: Skyway Schedule Delays

(Based on May 2006 CPM C6E0 & Potential Delay CPM Z6E0)



Each of the impacted activities shown in Figure 1 is discussed in detail in this report. It is important to note that the delays shown are not static, but continue to grow each month. The delays have been analyzed by incorporating present performance trends for hinge pipe beams, service platforms, and electrical substation redesign into the May 2006 Critical Path Method (CPM) schedule which result in a contract completion date of April 1, 2008, an extension of 299 working days.

PART 1 – MAJOR UNRESOLVED TIME IMPACTS:

Service Platform Delays (-174 Total Float)

Service Platforms are required to be installed at 26 of the 28 pier locations. These structural steel platforms have experienced significant delays resulting in 174 days of negative float; i.e., total delay beyond the accepted contract completion date of January 17, 2007. The connection details of the platforms to the pier tables were originally designed as bolted connections. However, these connections were unconstructible and were replaced with welded connections. This connection design was subsequently rejected by Toll Bridge Maintenance and a revised bolted connection was agreed upon. Design of the service platform connection was delayed because the consultant designer's task order expired, the loading criteria changed, and the Oakland structure design section was unable to increase staff in time to prevent delays. Service platform delays were partially mitigated by Contract Change Order (CCO) 83. This change order paid to accelerate the fabrication process and reduced the delay to the current 174 days of negative float. Installation of the service platforms is on the critical path of the project. There is an increased risk of further delays during the installation process. Tolerances for steel are very tight (19mm bolt in a 21mm hole) making it difficult to match the contract embeds. Originally the service platforms were scheduled to be installed using the pier table falsework as a work platform. As a result of design delays, the service platforms have to be installed "over-the-side" of the superstructure, since all of the pier table falsework has been removed. Additionally, because embeds for piers 14 and 15 were installed before the loading criteria was changed, those platforms are currently being re-designed and will also impact project schedule.

Hinge Pipe Beam (-144 TF)

The Skyway project includes 20 Hinge Pipe Beams (HPBs) between the frames of the superstructure to allow for thermal expansion and seismic movements. Two HPBs are installed at each expansion joint. Transbay Steel (TBS) is the supplier fabricating the HPBs. The contract specifies 4 inch thick (and varying) HPS 70W grade steel to be formed into 6 ft (and varying) diameter cylinders. Forming this size plate and grade to the required tolerances is not known to have been attempted before on any other bridge project. Typical industry practice is to fabricate HPS 70W steel into built-up bridge plate girders, not form it into tubular shapes with tight dimensional tolerances.

During production, both the parent material and the weld material developed cracks after rolling. The repair process created even more cracks causing significant delays to the project. More than 28 different procedures and various repair techniques were attempted to rectify the welding impacts. The Contractor was directed to perform these test procedures, and compensation was provided by CCO 160. Hinge Pipe Beam production was impacted from September 2004 through June 30, 2005, and production impacts continue through the present day.

The HPBs are classified on the plans as fracture critical elements; therefore, the welding workmanship was tested to a higher AWS standard called the "tension" criteria. This higher standard resulted in more repairs which in turn resulted in additional cracks developing in both the weld material and the parent base material. A fit-for-purpose analysis was performed and the testing requirements were reduced for several HPB welds to acceptable "compression" criteria. CCO 165 was implemented on June 30, 2005, allowing both the new repair procedures and production to resume on the HPBs. In an effort to mitigate delays and minimize the remaining repair time, CCO 164 was issued to compensate the Contractor for the premium pay for overtime worked.

Notice of Potential Claim (NOPC) 11 was formally filed on September 30, 2004, regarding the constructability of the HPBs. The Contractor claimed the following:

- The plate material was improperly specified
- Welding problems of this magnitude were not anticipated at the time of bid
- The tolerances specified in the plans were conflicting
- The weld material was improperly specified
- Procedure Qualification Record (PQR) Testing procedures were flawed

NOPC 11 was referred to a DRB on November 17, 2005. The DRB unanimously found merit in favor of the Contractor. The Board found that *"the fabrication problems were essentially the result of unanticipated material behavior actually encountered which could not have been reasonably anticipated by an experienced fabricator at time of bid."* Currently, the Department has not adopted the DRB's recommendations and the issue remains unresolved.

Although the Department has not accepted the DRB recommendation, an analysis based on the recommendation has been performed on the May 2006 CPM schedule, which allocates 90 days of the current 144-day HPB delay (see Figure 1) to the Department and the remaining 54 days to the Contractor. However, these delays are ongoing for two main reasons:

1) Long seam weld repairs are continuing to delay fabrication of the 10 remaining HPBs. Based on past performance, the weld repair cycles require 15 days for the six larger HPBs and 10 days for the four smaller HPBs. Assuming a single repair cycle for each pipe beam, the delay impact would add 130 days to the project completion date. In addition, recurring DAVI roller breakdowns further increase the risks of project delay. Recent roller repair is forecast to impose an additional 25 days of delay (5 weeks) on the schedule. The sum of these two delays results in an April 1, 2008, forecast completion date, 299 days beyond the currently approved contract completion date.

2) TBS is also the supplier fabricating the footing piles for the recently restarted E2-T1 contract (04-012E04) and is diverting scarce welding resources from the Skyway contract. The Contractor could argue that the restart of the E2-T1 contract impacted their ability to acquire additional welding resources in time to mitigate delays on the Skyway project.

If weld and roller repair delays materialize as projected, the Department may realize a total exposure of 299 days. The District recommends accepting responsibility for 220 days (74%) of the projected delay. This recommendation is discussed later in this report (Alternative A).

Electrical Substation (-116 TF)

The electrical substation floor had to be redesigned and raised during construction to accommodate the future post tensioning ducts. This redesign resulted in an overhead clearance conflict with the installation of the substation electrical equipment. A new lifting mechanism is being designed to complete the electrical equipment installation. Also, the substation straddles two precast sections and a detailed as-built survey is required to complete the structural floor support system. Because of delays resulting from the substation redesign, the initial support system could not be installed at the Stockton Yard and will have to be placed into the superstructure through access hatches and assembled in place.

CCO 75 was issued to the Contractor for the redesign with the time deferred. To date, the redesign has resulted in a 116 day delay. However, the delay is ongoing and could surpass the hinge pipe beam impacts and extend the contract completion date of the project. It has been estimated that this delay could exceed 218 days, due to potential delays in finalizing the shop drawings after the as-built surveys are complete. Despite mitigation measures currently being explored, significant risks continue to impact the schedule and the current contract completion date.

Westbound Steel Transition Span (-112 TF)

Both eastbound and westbound steel transition spans are fabricated by USI. Fabrication of these orthotropic box girders (OBG) were delayed by welding repairs that have resulted in disputes. The Contractor has submitted 15 separate NOPCs related to the fabrication of the OBGs that include interpretations on weld size measurements, non-destructive testing procedures, repair procedure requirements, sequence of QA inspections, and heat straightening procedures. Recently, NOPC 15, relating to interpretation of how to measure weld size, was presented to a DRB. The DRB unanimously found merit in favor of the Contractor and determined compensation is due for the increased effort and related impacts. The Department has not yet accepted the DRB recommendation and the issue remains unresolved.

Because of welding difficulties experienced by USI on the eastbound structure, the delivery schedule of the westbound transition span has significantly slipped, resulting in 112 days of delay. USI claimed that the welding-related impacts created undue financial difficulties during 2005 and that they were unable to complete their work in a timely manner. KFM has since taken control of the shop operations by installing a management team from another fabricator, Oregon Iron Works, for the remaining work on the westbound transition span.

Pike Path Hand Rail Modifications (-82 TF)

The horizontal spacing of the bike path hand rail posts had to be revised to meet the redesigned and varying sizes of the bikepath panels. This changed the anticipated fabrication methods of KFM's subcontractor, Kwan Wo, from a standard 8 meter panel to varying panel lengths. This issue has not been fully resolved and has resulted in an 82-day delay. Future delays may result from continuing shop drawing submittal delays and potentially late shipments from this DBE subcontractor.

Traveler Rail Mechanical Impacts (-81 TF)

A maintenance platform (traveler) is required underneath the pedestrian bikepath structure to service the steel portion of the bridge. This traveler moves along a rail by motors. The original design for the trolley motor used a factor of safety of 5. However, the design standards for the industry changed. Accordingly, Ingersoll-Rand that supplies all the motor trolleys for Caltrans travelers said they will not supply trolley motors that have a factor of safety less than 10. A design change was implemented that resulted in structural modifications and an increase in motor capacity. This design change has resulted in an 81 day delay. The delay is ongoing because of as-built fit-up issues with the bikepath sections. Although not currently on the critical path, the redesign of the motor trolleys adds increased risk to the Department for project delays.

Part 2 - SETTLEMENT PROPOSAL FOR TIME RELATED DELAYS

ALTERNATIVE A (Recommended)

The District/Toll Bridge Program proposal provides for a new contract completion date that incorporates an evaluation of all the known delays attributable to work activities for which the State, in whole or in part, is responsible. This settlement provides for a timely and commensurate time extension or 220 working days associated with these impacts, for which the State carries considerable exposure, and establishes a new contract completion date of December 4, 2007. This proposal provides full compensation for all known and anticipated delays.

As a result of recognized State delays and further exposure to additional State delays described herein, the current Skyway completion date of January 17, 2007, is not attainable. Even with selective acceleration of critical schedule activities and/or by deleting certain items of work such as polyester concrete overlay, "A" and "E" hinge pipe beam (HPB) installation, and modular deck joint installation, this date would still not be achievable.

Postponement of any contract item work from the Skyway to a future contract will increase the direct costs due to escalation, and will increase the problems and risks associated with a second contractor completing the work of the first, and is likely cause future corridor delays. The Contractor from the on-going Self Anchored Suspension bridge contract is also relying on the use of the Skyway structures for staging their work. If the Skyway is not available, the Department will be exposed to potential differing site condition or delay claims.

The Department has acknowledged responsibility for delays associated with service platforms, electrical substations, bike path hand rail modifications, and traveler redesign (See Figure 1). Service Platform fabrication activities are currently the controlling operation. Although, selective acceleration of the service platform installation work might mitigate this delay, it would then shift the critical path of the project to the Hinge Pipe Beam weld repairs that cannot be accelerated.

Based on Department interpretation of the DRB recommendations and using the May 2006 CPM schedule, the Department is **assumed** to be responsible for 90 of the 144 days of delay, in addition to future weld repair delays. Using current performance trends at the fabrication shop, the District estimates an additional 30 days for longitudinal seam weld repairs will be needed for the final two HPBs "BW", which are necessary to erect the remaining precast segments. The Department is therefore responsible for 120 days of delay (90+30). This is illustrated in Figure 2. In addition, 100 days of delay are anticipated for longitudinal seam weld repairs on the remaining HPBs "A" and "E" ("A"- 4 x15days, "E"- 4 x10 days). The Contractor will take responsibility for an additional 25 days required for DAVI roller repairs. If these delays are not mitigated, the Department would under the terms of the contract be exposed to a total projected delay of 299 (144+30+100+25) days with an associated contract completion date of April 1, 2008. A 299-day extension would expose the Department to $62.2M of TRO, as well as, other delay damages.

The Contractor believes the State is fully responsible for the current 144 day delay to date. Based on the DRB recommendations for NOPC 11, an analysis of the May 2006 schedule shows that the State is responsible for 90 days and the Contractor responsible for the remaining 54 days of the 144-day delay. The Department also believes the Contractor is responsible to mitigate the 54 days of current project delay and the 25 days of DAVI roller repair for a total of 79 (54+25) days of delay.

The Department's exposure to the longitudinal seam weld repair delays, using the DRB findings, would be 90 days for fabrication of the past HPBs, plus 30 days of repair time for the "BWs." In addition, 100 days of future repair time for the HPBs "A" and "E" is projected for a total of 220 working days of delay.

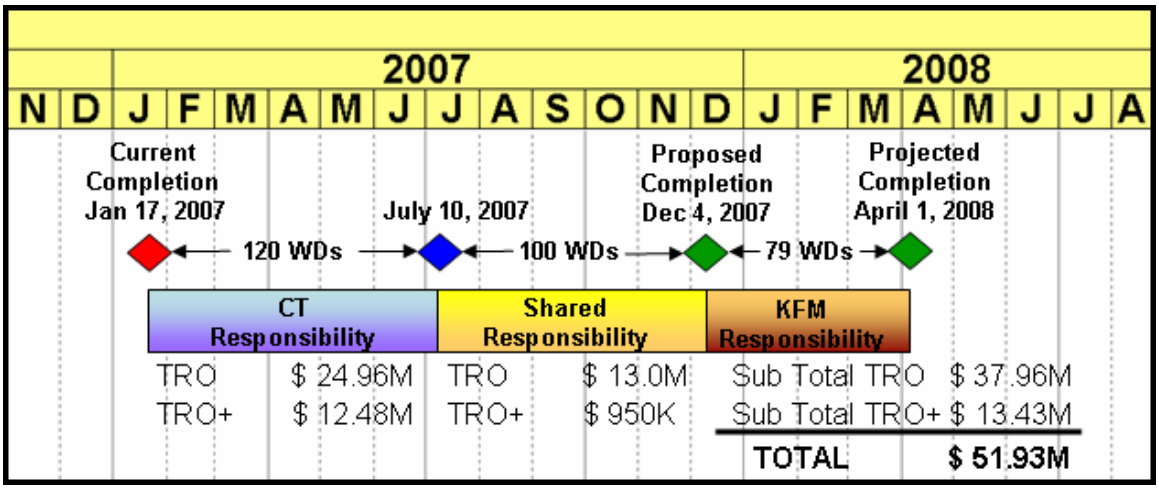


Figure 2

In order to provide a commensurate contract time extension and establish an appropriate project completion date, the following recommendations are proposed:

1) Provide the Contractor additional time to complete the project in accordance with the DRB recommendations for the HPB fabrication delays. The Department's responsibility for delays would include 90 days for previous long seam weld repairs and 130 days for future repairs based on recent performance. A total contract time extension of 220 (90+130) days is recommended resulting in a revised project completion date of December 4, 2007. No time extensions are provided for equipment breakdowns, fabricator shutdowns, and/or labor issues.

2) Administer TRO at the full rate of $208,000 per day for 120 days of State responsibility, and at a reduced rate of $130,000 per day for the remaining 100 days of extension for the shared responsibility. If this proposal is accepted and the change order processed expeditiously, the Contractor agrees to a 38% reduction ($130,000/day vs. $208,000/day) of TRO compensation for the 100 days of shared responsibility, which equals a $7.8M savings to the State. In the event that unforeseen State-caused delays occur after December 4, 2007, the Contractor agrees to a reduced TRO of $43,500 per day, or a 79% reduction. A change order will be issued explicitly shifting the responsibility of all known and should-be-known risks to the Contractor. Unforeseen future delays would be compensated at the reduced TRO rate.

3) Calculate extended equipment and supervision (TRO+) in accordance with the DRB recommendations previously provided for in CCO 107s3.

The District/Toll Bridge Program proposes a 220-day extension to complete the remaining work on the project and establish an orderly and achievable completion date of December 4, 2007. This will allow all critical / near critical activities to be completed by avoiding overlapping and stacked activities on the westbound Skyway, including but not limited to barrier work, electrical, mechanical, post tensioning grouting operations, and the polyester concrete overlay. The extended completion date will also allow the Contractor to schedule the

polyester concrete overlay work between April 1 and November 1, the time period identified as that best suited for material placement, with regard to temperature and humidity constraints.

ALTERNATIVE B: Postponing Contract Item Work to a Future Contract:

This alternative postpones non-essential contract item work to a future contract, including installation of service platforms and related electrical work, fabrication of HPBs "A" and "E", modular joint seal assemblies, and polyester concrete overlay items. A schedule analysis of alternative B forecasts a completion date of August 29, 2007, a 156-day contract extension. If the schedule were to slip beyond this date from any owner-caused delay, the Department would be further exposed to additional TRO, plus all associated extended equipment and labor impacts (TRO+). Postponing work to a future contract would also lead to higher final costs due to escalation and increased delivery risks for the SAS project and the entire SFOBB corridor.

It is estimated that this alternative would result in an exposure to the Department of $103.1M, based on a probabilistic (stochastic) decision analysis for the direct, indirect and schedule impact costs. (See Table 1).

Advantages and Risks to Alternative B

The apparent advantage gained under Alternative B is less TRO and TRO+ costs for the Skyway contract as a result of an early completion date. In comparison to Alternative A, Alternative B results in $13M savings in TRO and TRO+, and a savings of $10M in deleted item work for a total of $23M.

The risks associated with Alternative B consist of not completing all item work on this contract, and causing higher costs for escalation, mobilization, and resumption of partially completed work at a later date. Credit for deleted contract item work is expected to be limited because the Contractor's material procurement process has been completed, but the fabricated components are not finished, e.g., HPBs, and service platforms. Such costs would be "sunk" and recur later at a higher price in a subsequent contract. Design and construction support costs will also be extended, requiring additional expenditures for contract closeout, preparing new plans and specifications, and administering a new contract.

The cost for completing all deferred item work on a future contract is estimated to be $32M. This includes $2M in deferred closeout costs for NOPCs and CCOs, and $4M in unknown risks and impacts to other corridor contracts. Consequently, Alternative B has a net cost of $9M more than Alternative A.

Further risks are associated with the delayed completion of the Skyway contract, but are difficult to quantify. For example, the SAS contractor anticipates the use of the Skyway structures for staging materials and equipment. If the Skyway is not available, the Department could be exposed to potential differing site condition or delay claims.

Schedule Assumptions

1. Move fabrication of HPBs "A" and "E" to a future contract
2. Delete service platform installations
3. Delete service platform electrical installation
4. Delete polyester overlay installation
5. Redesign electrical substation floor frame

Based on the above assumptions, the schedule for Alternative B forecasts a project completion on August 29, 2007, 156 days beyond the current contract completion date (forecast schedule – Z6EV). The critical path progresses through the installation of the electrical substations, for which the Department is responsible. This schedule also forecasts a 151-day delay for hinge pipe beams (5 days from becoming critical), of which 90 days are attributable to the long-seam weld repairs. The DRB has recommended that the Department compensate the Contractor for these long-seam weld repairs.

Responsibility for the 156-day delay is allocated as shown in the following outcomes:

- The most optimistic outcome (**Best Case)** divides the delay responsibility between the Department and the Contractor to 95 and 61 days**,** respectively (90 days for long seam weld repair through May 22, 2006; and 5 days delay due to substation issue).

- The **Most Likely** outcome assigns 125 delay days to the Department (90 days for the long seam weld repair through May 22, 2006; 30 days for ½ of the remaining 61 days HPB delays; and 5 days delay due to substation issue), and 31 delay days to the Contractor.

- The least optimistic outcome (**Worst Case)** assigns all 156 delay days to the Department.

Detailed analyses are on file in the project records.

ALTERNATIVE C: Postpone NOPC resolution and continue with contract work:

Under this alternative, DRB recommendations are not adopted, and resolutions of the NOPCs are deferred, and the contract work progresses without regard to any of the Departments responsibility for time extensions.

The most likely outcome of this alternative forecasts a completion date of April 1, 2008, extending the project 299 days. It is estimated that this alternative would result in an exposure to the Department of $110.8M, based on a probabilistic (stochastic) decision analysis for the direct, indirect and schedule impact costs (See Table 1).

Advantages and Risks to Alternative C

The advantages of this alternative include the ability to determine the actual cost of damages incurred and the possibility to overturn or reverse the DRB recommendations through arbitration. If the Department prevails in arbitration, then this alternative presents the lowest expected costs.

Risks are associated with any assumptions that the Department will prevail in arbitration. It is expected that an arbitrator would render similar rulings to the DRB recommendations. In such events, the estimated exposure amounts are anticipated to be significantly higher than the current settlement proposal (See Attachment "A"). Arbitration will result in additional expenditures, including costs for expert witnesses, depositions, and interest on the claimed amounts.

Alternative C gives the Department the least control over the completion date for the Skyway contract. It is anticipated that the Contractor would influence the schedule and shift, to the Department, the responsibility for extended delays from service platforms, electrical substation, bikepath hand rail, and traveler rail issues.

Schedule Analysis

- The optimistic outcome **(Best Case)** forecasts project completion on **September 26, 2007, 174 days** beyond the current authorized completion date of January 17, 2007 (May 2006 CPM schedule – C6E0).

- The Most Likely outcome forecasts project completion on **April 1, 2008, 299 days** beyond the current authorized completion date (May 2006 forecast schedule – Z6E0). The responsibility for the 299-day delay is divided and assigns **220 days** to the Department (90 days for the long seam weld repair to date, 30 days forecast for the HPB "BW" delay; and 100 days estimated for the remaining HPB delays), and **79 days** to the Contractor.

- The pessimistic outcome **(Worst Case)** forecasts project completion on **June 3, 2008, 343 days** beyond the current authorized completion date (impact schedule – TIAC). The responsibility for the 343-day delay is divided and assigns **250 days** to the Department and **93 days** to the Contractor.

TABLE 1: ALTERNATIVE COMPARISONS*

Alternative	Estimated Cost	Forecast Completion Date
'A'	94.4 M	December 4, 2007
'B'	103.1 M	August 29, 2007
'C'	110.8 M	April 1, 2008

* Detailed analyses on file

Part 3 – Remaining Contract Change Orders

Requested Amount $ 50,826,521
Merited Amount $ 29,094,585

The following discussion addresses the remaining outstanding CCOs. Major change orders are addressed in detail in this claims settlement report. For a complete list see Appendix A. A detailed cost analysis for each CCO is on file. The contractor has agreed to accept the amounts proposed for these merited changes as part of the settlement package.

CCO 55 Hinge Modifications **Requested Amount $ 6,576,868**
Merited Amount $ 2,364,000

The original planned construction staging provided for cast-in-place hinge bearing diaphragms after erection of the hinge segments. During "Mission Control" design reviews and development of composite segment working drawings, agreement was reached with the contractor to change the hinge segment to a fully precast design thereby eliminating the cast-in-place hinge bearing diaphragms in the field and related constructability impacts. The resulting heavier hinge segment necessitates the simultaneous erection of both segments to balance the moments on the pier. This requires changing the counterweight from cast-in-place to precast. Additionally, the square grout pockets for the circular segmental hinge pipe beam bearings will be changed to a continuous circular pocket to facilitate constructability impacts.

During the development of composite working drawings in "Mission Control" and fabrication in the Stockton pre-cast yard, significant constructability and conflict issues were identified early and resolved e.g., conflicts and congestion in the hinge segments between reinforcing steel bars, prestress tendons, vertical post tensioning bars, and hinge bearings.

KFM presented a cost estimate on April 4, 2005, of $6,576,868 for 40 elements. An evaluation was performed for each of these changes, and the District found merit to $2,364,000 of the claimed amount, which is included in this proposed settlement. The major difference between the claimed and merited amounts was the difference between the Contractor's forward priced estimates and actual measured mile costs. A detailed force account analysis is on file in the project records. The acceptance of this claims settlement report would resolve both the direct and indirect costs associated with the hinge modifications.

CCO 74 Pier Table Reinforcement **Requested Amount $13,000,000**
Merited Amount $ 5,771,104

According to the Contractor's baseline schedule, pier table construction was originally scheduled to begin in July 2003. However, multiple requests for information (RFIs) revealed numerous conflicts with the reinforcement and post tensioning in all dimensions. Resolving these conflicts was complicated by the extensive use of T-headed reinforcement that was placed three-dimensionally. As a result, CCO 12 was issued authorizing the Contractor to build a full scale pier table mockup. Construction of the mockup resolved many issues, it also revealed many more conflicts that were not evident from the two-dimensional contract plans. In order to provide the Contractor and the Engineer with conflict free plans needed to build the work, CCO 99 was issued in August 2003 authorizing the Contractor to produce composite drawings for every pier table.

As a result of CCO 12 and CCO 99, 24 of the 26 pier table related contract drawings were revised. Given the minimally-detailed nature of the contract drawings, revisions provided only general direction with which to resolve placement conflicts. These drawing revisions did not negate the need for composite drawings specific to each pier table. The majority of the changes to the contract drawings were related to resolving reinforcement and post-tensioning conflicts.

The complete set of composite drawings for the first pier table to be constructed (E16E) were not fully approved until February 2, 2004. However, pier table construction began in December 2003 before completion of the composite drawings. The completed composite drawings resolved all known conflicts in the two dimensional drawings. Nevertheless, "field issues" arose as the work progressed. These "field issues" required specific direction from the Engineer to resolve. Additionally, in order to accommodate the precision necessary with which to complete the work, KFM and Harris Salinas/Bay Area Reinforcing, a JV (HSBAR) employed extraordinary measures to precisely layout and place reinforcement bars and post tensioning. These measures included special fabrication tolerances for re-steel, re-fabrication of re-steel, precision layout for re-steel and post tensioning, and additional surveying to ensure precise placement. Although the pier table construction was never on the critical path, it was for some time within approximately one month of critical. HSBAR worked ten-hour shifts, five days a week, and Saturdays when necessary. KFM added additional supervision and a swing shift to mitigate delays due to the impact of design changes, "just-in-time" completion of the composite drawings, and resolution of field issues as they arose. KFM has claimed major installation inefficiencies associated with the changes and the just in time completion of the composite placing drawings with respect to the reinforcement, post tensioning and associated form work operations.

KFM and the Department have worked toward a cost resolution for the construction of the pier tables since June 2005. Of the $13M claimed, the District found merit to $5,771,104 which is included in this settlement proposal. Acceptance of this claim settlement report would resolve all costs, including direct and indirect costs, associated with the pier table construction. A force account analysis "based on the measured mile" approach is on file in the project records.

CCO 127S2 & CCO 154S1 Extended Equipment (TRO+) Requested Amount $13,000,000
Merited Amount $11,879,686

CCO 127-S2 and CCO 154-S1 provides compensation to the Contractor for extended equipment and other time-dependent costs not covered by TRO associated with contract time extensions previously granted in CCO 127-S0, CCO 127-S1 and CCO 154-S0. These time extensions were provided for delays affecting the hinge segment composite drawings and the associated restart of the Stockton casting yard. Compensation for the extended equipment and supervision costs is based on the accepted DRB recommendations previously provided for CCO 107-S3.

Based on the DRB findings (as applied to change orders earlier in this contract), and a review of the project schedule, the District has determined the amount merited is $11,879,686. A detailed cost analysis in accordance with Section 4-1.03D of the Standard Specification is on file in the project records.

CCO 143 Temporary Power for Electrical Requested Amount $500,000
Merited Amount $480,558

The Skyway contract is scheduled to be completed approximately five to six years before the SAS and Oakland Touchdown contracts. Some of the permanent electrical equipment will not be installed on the Skyway Project. However, other equipment on the Skyway must be hooked up to a power supply. This CCO will keep the Skyway electrical system energized after project completion by connecting the new 15kV switchgear to the existing 15kV power cable from the KFM construction job site.

The District has determined the Contractor is due $ 480,558 for furnishing the temporary power. The acceptance of this claim settlement report would resolve all costs, including direct and indirect associated with furnishing temporary power for the electrical equipment. A force account analysis in on file in the project records.

CCO 153 Precast Panel Warping – Stockton yard Requested Amount $ 2,253,886
Merited Amount $ 275,000

The geometric characteristics of the structure (variable depth, profile and cross-slope) require 216 of the 876 (approximately 25%) of the precast concrete segment panels be warped. Details 1 through 14, on contract plan sheets 757 through 770 of 978, show flat panels.

Bidder inquiry 173 identified that the precast panel details show flat panels and asked for confirmation that the panels are not warped. The Department responded to this inquiry stating that "precast panels may be warped in some areas due to geometric requirements". As the use of the word "may" did not provide a clear and definitive response that many panels do warp, the contractor relied upon the direction provided in Standard

Specification 5-1.04 "Coordination and Interpretation of Plans, Standard Specifications, and Special Provisions", which states, *"Detail drawings shall prevail over general drawings"*. The flat panels shown in the precast panel detail sheets are the most detailed drawings for this work. As these details show flat panels and do not call attention to the geometric requirements of the structure, which force some of the panels to warp, these details are a misrepresentation. Therefore, additional work is required to warp the precast concrete panels. At time of bid, the contractor could not have anticipated the magnitude (25%) of the number of panels requiring changes.

Of the $ 2,253,886 requested, the District has found merit to $ 275,000 for the additional cost in furnishing 216 warped precast concrete segment panels. The major difference is that the Contractor estimated the requested amount prior to completion of warped panels, whereas the merited amount was based on a force account analysis using an actual measured mile approach. The acceptance of this claim settlement report would resolve all costs, including direct and indirect, associated with the precast panel warping. A force account analysis is on file in the project records.

CCO167 Remove Pile Head Connection **Requested Amount $507,947**
Merited Amount $358,986

The Federal Highway Administration (FHWA) and Federal Bureau of Investigation (FBI) investigated allegations of defective welding and deficient safety practices made by former employees of the Contractor. This investigation included the removal and testing of three pile head connection plates located at Pier E4W. The Engineer directed the Contractor to perform this additional testing in accordance with Section 8-3.01 "WELDING," of the Special Provisions. After testing was performed under the direction of the FHWA, no welding defects were discovered. Since no defects were found, the Contractor will be compensated for this extra work per Section 4-1.03D "Extra Work," of the Standard Specifications.

The District has determined that $358,986 is due to the Contractor. Acceptance of this claim settlement report would resolve all costs, including direct and indirect, associated with the removal, testing, and repair of the three pile head connection plates related to the FHWA investigation of alleged defective welding. A force account analysis is on file in the project records.

CCO 168 Pile work stoppage due to FBI investigation **Requested Amount $1,782,909**
Merited Amount $ 232,124

The FHWA and FBI investigated allegations of defective welding and deficient safety practices made by former employees of the Contractor. The Engineer ordered the temporary suspension of all foundation concrete pours in accordance with Section 8-1.05 "Temporary Suspension of Work" from April 6, 2005, to May 5, 2005. The placement of pile, footing, pier, and pier table concrete on the westbound bridge were delayed by the Engineer's order.

The Contractor requested $1,782,909 on June 1, 2006, for all of the additional costs incurred due to the suspension of work. After review and analysis, the District found merit for a total cost of $232,124. A force account analysis is on file in the project records.

CCO 170 Deletion of Electrical Equipment **Requested Amount $0**
Merited Amount $(1,387,000)

The Skyway will be completed approximately five to six years before the SAS and Oakland Touchdown contracts. Electrical equipment related to traffic operations and monitoring systems will not be needed for up to 6 years. If the electrical components were installed, they would corrode and degrade, thereby shortening their useful life. Therefore, it is proposed that the State take possession of some electrical equipment, and other non-essential equipment be deleted from the contract.

1. MVDS and their harnesses
2. Cameras and cable/harnesses
3. CMS panels and harnesses (State Furnished)
4. Fiber Optic cable
5. 15 kV cable
6. PLCs from the RTUs
7. Call boxes
8. Testing of installed components

This CCO results in a net savings for both electrical equipment and construction costs. The Contractor has agreed to credit the State $1,387,000. A force account analysis is on file in the project records.

CCO 188 Polyester Concrete Overlay **Requested Amount $3,869,691**
Proposed Settlement $3,541,706

Contract bid items 49 and 51, Furnish Polyester Concrete Overlay (20 MM) and (13MM) respectively, are designated as a final pay items (F) in the Engineer's Estimate. However, Section 10-1.36 of the Special Provisions requires polyester concrete to be field measured on the quantity placed and paid at the unit price. The first paragraph of 10-1.36 states:

> *Furnish polyester concrete overlay of the thickness listed in the Engineer's Estimate will be measured by the cubic meter. The volume to be paid for will be determined from calculations based on the quantity of resin binder used and the yield of the specified mix design. The Contractor shall furnish suitable measuring devices to assure correct proportioning of materials and accurate measurements for calculating pay quantities. The pay quantity shall be the calculated quantity of polyester concrete overlay used in the work, exclusive of material used in trial overlays, and any wasted or unused material.*

Since the Special Provisions override Standard Specifications, the Department accepts responsibility for this conflict in contract documents. The estimated cost increase of $3,541,706, including price escalations due to State caused delays, is based on a force account analysis on file in the project records. The acceptance of this claim settlement report would resolve all costs, including direct and indirect, associated with the Polyester Concrete Overlay.

PART 4 - Notice of Potential Claims

Claim Amount $ 39,167,406
Proposed Settlement $ 14,016,557

With the exception of NOPCs associated with Universal Structural, Inc (USI), all other NOPCs on the Skyway contract are recommended for settlement as discussed herein.

NOPC 7 Concrete Modulus of Elasticity

Claim Amount $ 3,403,993
Proposed Settlement $ 752,115

Pacific Cement Corporation supplied superstructure concrete to KFM for the 452 precast concrete segments cast at the Stockton Precast Yard.

The contract special provisions require that segment concrete comply with a minimum compressive strength of 55 MPa for acceptance and a minimum modulus of elasticity (MOE) of 35,600 MPa for mix design approval. The Contractor claimed that within the contract, Caltrans Bridge Design Specification 8.7.1 led them to believe that a 55 MPa compressive strength concrete mix design would achieve a 35,600 MPa MOE. However, after bid award and during trial batching the Contractor found that in order to satisfy the 35,600 MPa requirement, a compressive strength on the order of 70 MPa was necessary. The Contractor needed to perform additional testing, use additional cementitious material, and change to a different type of cement from that on which they based their bid.

NOPC 7 was submitted to the Department on March 23, 2004. The Contractor asserted that the contract requirements for superstructure concrete were misleading and conflicting. Additional compensation in the amount of $3,403,993 was requested for alternate materials and additional testing required to achieve the specified modulus of elasticity.

On August 25, 2005, the DRB majority recommended that Pacific Cement Corporation be compensated for additional testing, additional cementitious material (9.8 v 8.5 sacks per cubic yard), and the cost difference of "Pronto" Type II cement over the regular Type II cement necessary to meet the specified minimum MOE requirement. Due to the Contractor's failure to forward Pacific Cement Corporation's NOPC correspondence to the Department in a timely manner, costs incurred prior to March 23, 2004, remain a matter to be resolved between the Contractor and Pacific Cement Corporation. This time period represents approximately 20% of the segment production work involved.

Using the DRB majority recommendation as a guide to resolution, it is proposed to compensate the Contractor for:

1. The additional testing required to develop a mix design in compliance with the Contract specifications
2. 80% percent of the additional cementitious material costs above that on which the Contractor based their bid. (This value represents only that work occurring after March 23, 2004)

The District recommends that a settlement offer in the amount of $752,115 be made. The settlement amount is based on the Contractor's submission of actual testing costs and the Department's force account analysis of additional cementitious material costs.

The complete cost analysis is on file in the project records. The acceptance of this claim settlement report will resolve all costs, including direct and indirect, associated with NOPC 7.

NOPC 11 Hinge Pipe Beam Fabrication **Claimed Value $ 35,763,413**
Proposed Settlement $ 13,351,167

Hinge Pipe Beam Fabrication schedule delays were previously addressed in this report. Determination of quantum is based on the Departments interpretation of the DRB recommendations. The costs associated with the fabrication delays are broken into two components A) Field Impacts and B) Fabrication Impacts.

A) Field Impacts

The Contractor provided mitigation measures to offset the delays associated with the late delivery of the HPBs. This required frequent CPM schedule re-sequencing due to the uncertainty of the HPB delivery dates. After re-sequencing the time impact analysis showed a 17-month projected delay and a completion date of June 3, 2008 (see CPM schedule "TIAC").

The Contractor's original plan was to install precast segments starting from Pier 16 and working continuously to Pier 3. The HPBs were scheduled to be installed in the same sequence. However, because the late hinge pipe beam delivery caused a gap in the superstructure limiting the Contractor's access to the remaining portions of the bridge, the following disruptions occurred:

- Re-sequence of segment erection
- Remobilization of the Self Launching Erection Devices (SLEDs)
- Double handling of segments in the Stockton yard
- Disruption of the closure pours
- Disruption of post tension of the continuity tendons
- Increased marine support instead of surface access from the eastbound bridge
- Inefficiencies to remaining pier work

B) Fabrication Impacts

The fabricator experienced significant disruptions to the fabrication process and incurred additional costs. The following items have been claimed by the fabricator

- Equipment Repairs
- Equipment Parts
- Additional QC inspection
- Additional Weld Repair time
- Inefficiencies
- Additional Overhead costs

The Contractor submitted a claim amount of $35,763,413 for both field and fabrication impacts (not including time impacts). The Department performed a force account analysis based on Caltrans' daily inspection reports for work completed and estimates of projected costs for unfinished work. The proposed amount is substantially lower than the claimed amount because many items belong in the original scope of contract item work.

Based on the field and fabrication impacts discussed above, the District recommends a settlement offer in the amount of $13,264,442 be made to the Contractor. The acceptance of this claims settlement report would resolve all costs, including direct, indirect and time-related costs, associated with NOPC 11. If the Department decides not to settle this NOPC, the Department could assume responsibility for schedule impacts with full TRO and TRO+ costs, work slow down and foreseen risk factors.

SUMMARY OF PROPOSED SETTLEMENT:

Table 2: Proposed Settlement* - Cost Summary

Impacts	Claimed Amount	Estimated Exposure	Proposed Settlement
Time Related Overhead (TRO)	45.6 M	45.6 M	38.0 M
Extended Equipment (TRO+)	25.6 M	16.5 M	13.3 M
Outstanding CCOs:	50.8 M	43.9 M	29.1 M
Pacific Cement (NOPC 7)	3.4 M	1.2 M	0.8 M
Hinge Pipe Beams (NOPC 11)	35.8 M	22.7 M	13.3 M
TOTAL	161.5 M	130.5 M	94.4 M *

* Note: This proposed settlement includes $13.2M in previously acknowledged CCOs

RECOMMENDATION:

Approval is hereby requested to authorize the District/Toll Bridge Program to execute contract change orders with KFM-JV for settlement of all costs (direct, indirect, and time related impacts) as discussed in this report, excluding the direct costs for Universal Structural Inc.'s NOPCs.

Approval for this settlement proposal is in the best interest of the State for the following reasons:

- Closes out all existing disputes, delays and known impacts, including NOPCs (except USI)
- Provides complete and final resolution to the unanimous DRB rulings against the State on HPBs
- Establishes an agreed upon Skyway completion date of December 4, 2007
- Contractor agrees to a reduced TRO of $130k/day (from $208/day) for the last 100 working days, and a TRO rate of $43.5k/day for any future State caused delays
- The proposed settlement of $94.4M provides the Department relief from related exposures estimated at $130M
- The SAS contractor is relying on the Skyway structures for staging materials and equipment. If the Skyway is not available, the Department would be exposed to potential differing site condition or delay claims.

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- The proposed settlement of $94.4M provides the Department relief from related exposures estimated at $130M
- The SAS contractor is relying on the Skyway structures for staging materials and equipment. If the Skyway is not available, the Department would be exposed to potential differing site condition or delay claims.

Based on the considerable exposure to the Department, the District/Toll Bridge Program recommends that the sum of $94,409,113 be approved for payment as outlined in this request. The KFM-JV has indicated they will accept this amount as full, complete and final settlement for all costs, disputes and claims resulting from or associated with all impacts and delays known to date.

The construction allocation will be amended to finance this proposed settlement. Funding requests will be obtained prior to the issuance of the necessary contract change orders.

Attachment A - Potential Settlement Costs

Item #	Description	KFM Claim Amount	Estimated Exposure Amount	CT Proposed Settlement Amount
TRO	**Time Related Issues (Settlement)**	**71,453,335**	**62,253,335**	**51,297,971**
	TRO 220 days @ $208,000/day (Contract Rate)	45,760,000	45,760,000	
	Extended Equip cost (TRO+)	25,693,335	16,493,335	13,337,971
	TRO 120 days @ $208,000/day (Contract Rate)		0	24,960,000
	TRO 100 days @ $130,000/day (Agreed Rate)		0	13,000,000
CCOs	**Change Orders (Merited)**	**50,826,521**	**43,941,258**	**29,094,585**
CCO 24S3	Walkway installation issues	465,445	465,445	390,000
CCO 48S1	Conduit routing	675,000	650,000	602,194
CCO 45	P tendon changes	(77,177)	(77,177)	(77,177)
CCO 55	Hinge modifications	6,576,868	4,387,766	2,364,000
CCO 56	Future light pipe	41,194	41,194	41,194
CCO 59	Ladder at deck MH	111,085	111,085	101,030
CCO 65S1	Closure pour rebars	45,117	45,117	45,117
CCO 74	Pier tables	13,000,000	10,183,278	5,771,104
CCO 75S1	Substation redesign field conflicts	374,367	374,367	209,803
CCO 79	Tranverse Rib & continuity tendon profiles	45,000	400,000	1,635
CCO 80	Jacking/creep coefficient	400,000	400,000	208,633
CCO 81	Deck ties	35,089	35,089	6,637
CCO 82	Precast panel/diaphram	986,059	986,059	70,000
CCO 88	Transition span revisions	276,638	276,638	211,016
CCO 90S3	Bike path installation	461,850	461,850	403,284
CCO 97S1	Turbidity control	0	0	0
CCO 99S2	Pier table composite drawings	75,000	75,000	0
CCO 103S1	Pipe beam temperary support	403,239	403,239	305,000
CCO 108	Temp Tower B	(200,000)	(200,000)	(200,000)
CCO 108S1	Ortho tub soffit stiffening	205,673	205,673	0
CCO 109	Bike path post tensioning bar	197,381	197,381	197,381
CCO 121	Mech pipe loops at hinges	82,963	82,963	39,123
CCO 127S2	Hinge delay TRO+	11,000,000	10,166,716	10,166,716
CCO 128	Bike path railing changes (fabrication)	913,350	913,350	913,350
CCO 128S1	Bike path railing changes (installation)	142,668	142,668	0
CCO 135	Butt splice	0	0	0
CCO 138	Segment foundation modification	46,488	46,488	27,689
CCO 143	Temporary power for electrical	500,000	480,558	480,558
CCO 151	Cormorant nest spec change	159,445	159,445	159,445
CCO 152	Pier table panel	729,820	729,820	729,820
CCO 153	Stockton panel warping	2,523,886	2,523,886	275,000
CCO 154S1	Hinge delay TRO+	2,000,000	1,712,970	1,712,970
CCO 156S1	Modular joints	0	0	0
CCO 167	FHWA weld inspection (weld removal)	507,947	507,947	358,986
CCO 168	Pile work shutdown due to FBI investigation	1,782,909	1,782,909	232,124
CCO 169	Barrier rebar mod/pull box	50,000	36,802	36,802
CCO 170	Deletion of electrical equip	0	(693,500)	(1,387,000)
CCO 174	Crew boat	35,000	0	0
CCO 179	Additional HPS70W steel for pipe beams	951,563	951,563	951,563
CCO 183	Canteliver tendons: protect anchorage	26,275	26,275	26,234
CCO 184	Spare duct grouting	216,244	216,244	178,648
CCO 185	Exterior closure struts	40,444	40,444	0
CCO 186	Grout sequence and restriction change	1,150,000	1,150,000	0
CCO 188	Polyester concrete quantity overrun	3,869,691	3,541,706	3,541,706
CCO 191	Barrier issues	0	0	0
NOPCs	**Notice of Potential Claims (Settlement)**	**39,236,406**	**24,269,000**	**14,016,557**
NOPC #11	Hinge Pipe Beam repair issues (TBS & KFM)	35,763,413	22,500,000	13,264,442
NOPC #7	Pacific Cement MOE costs	3,403,993	1,700,000	752,115
NOPC #26	Pier Table Precast Panel	69,000	69,000	0
Total (Potential Settlement CCO)		**161,516,262**	**130,463,593**	**94,409,113**

APPENDIX A

Submitted By:

DOUGLAS COE
Resident Engineer, District 4 Construction

Recommend Approval:

PETER SIEGENTHALER
District 4 Division Chief, SFOBB Construction

Recommend Approval:

KEN TERPSTRA
Project Manager

Recommend Approval:

BOB FINNEY
Deputy District 4 Director, Construction

Recommend Approval:

TONY ANZIANO
Toll Bridge Program Manager

Recommend Approval:

BIJAN SARTIPI
District 4 Director

Recommend Approval:

JONATHAN TAPPING
Toll Program Construction Coordinator

Recommend Approval:

ROBERT PIEPLOW
Chief, Division of Construction

Recommend Approval:

JOSE AGUIRRE
Assistant Chief Counsel, Legal Contracts

Settlement Approved:

RICHARD LAND
Deputy Director, Project Delivery

Doug Coe
09/27/2005 05:37 PM

To: Peter.Siegenthaler@dot.ca.gov, Bill Casey
cc: Kannu Balan, <Don.Ross@ch2m.com>
Subject: Contract 04-012024 - DRB Recommendations NOPC #7

----- Forwarded by Doug Coe/D04/Caltrans/CAGov on 09/27/2005 05:32 PM -----

WMLM@aol.com
09/27/2005 05:35 PM

To: Doug_Coe@dot.ca.gov, chris.villa@kfmjv.com
cc: FGraebe@aol.com, dicklewis1@cox.net, Lee.Zink@KFMJV.com
Subject: Contract 04-012024 - DRB Recommendations NOPC #7

Gentlemen, Attached at the DRB Majority and Minority Recommendations regarding Dispute No.4-NOPC#7- Modulus of Elasticity (Concrete). Unfortunately, the DRB could not arrive at a unanimous recommendation on this issue. Signed hard copies will follow by mail. The date when the various specified time periods under the requirements of Section 5-1.12 DISPUTES REVIEW BOARD of the Special Provisions will begin to run will commence on Wednesday, October 5, 2005 by which time you should be in receipt of the signed hard copies of the Recommendation reports. Sincerely, Warren Bullock- DRB Chair NOPC#7-Recommendation.ZIP

DISPUTE REVIEW BOARD

State of California-Department of Transportation

Contract Number 04-012024 – East Span Skyway Project

Dispute No. 4 – Notice of Potential Claim #7- Modulus of Elasticity (Concrete)

Hearing Dates: June 30, July 1 and August 25, 2005.

Hearing Attendees: Caltrans Representatives:

Douglas Coe
William Casey
Patrick Treacy
Kenneth Beede

Contractor Representatives:

Lee Zink
John Hassard
Dennis Chambers
Ricardo Ramirez – Pacific Cement
Kurt Rossetti – Pacific Cement

BACKGROUND

The East Span Skyway Project consists of two superstructures (Eastbound and Westbound) consisting of a total of 452 precast concrete girder segments utilizing balanced cantilever construction for a total of four rigid frames including fourteen piers per superstructure. The substructure includes steel box/reinforced concrete footings supported on cast-in-shell concrete piles.

The California Department of Transportation (hereinafter referred to as the "State", "Department", or "Caltrans"), awarded the contract for the East Span Skyway Project (Contract Number 04-012024) to Kiewit/FCI/Manson, JV, (hereinafter referred to as "KFM", or "Contractor"), on January 17, 2002.

The Contractor elected to construct the precast concrete segments at a precasting facility it developed in Stockton, California, and awarded a Material Contract to furnish the concrete for the precast segments to Pacific Cement (hereinafter referred to as "Pacific") on August 8, 2002.

DISPUTE

The contract requires the bridge superstructure concrete to conform to certain specified requirements as follows:

Compressive Strength - Minimum 55MPa at 56 days
Modulus of Elasticity - Minimum 35,600MPa at 28 days
Creep - Maximum 75 Millionths/MPa after 365 days
Shrinkage - Maximum 0.045% after 180 days

By letter dated October 11, 2002 the Contractor provided the Department with the interpretation by both Pacific Cement and California Ready Mix (KFM's concrete supplier at the bridge site) of the specification with regard to the Modulus of Elasticity (MOE) testing requirements for superstructure concrete.

The Department's letter of response, dated October 18, 2002, requested a meeting with KFM and its concrete suppliers to discuss the Modulus of Elasticity specification requirements for superstructure concrete.

In developing its concrete mix designs and running trial batches, Pacific Cement found that although its mix designs met the specified concrete strength of 55MPa at 56 days they did not meet the MOE requirement of 35,600MPa at 28 days. Only when additional cementitious materials were added, which produced compressive strengths in the order of 70-80MPa, were the specified MOE requirements approached. As a result of these findings from the trial batches, the Contractor submitted RFI #332 to the Department dated October 18 & 21, 2002, attaching letters from WJE, dated September 16, 2002 and Sundquist Engineering dated September 17, 2002.

KFM and its concrete suppliers met with the Department on October 22, 2002, to discuss the specification requirements for MOE for superstructure concrete. It was agreed at this meeting that the specified MOE was a requirement for mix design approval only and was not a requirement for field acceptance of the concrete.

Following this meeting the Department, in a letter dated October 28, 2002, confirmed the requirements for MOE, Creep and Shrinkage as specified in Section 10-1.27 of the Special Provisions. This letter also stated "With this confirmation it is anticipated that KFM and Pacific will be rescinding RFI#332 and their request for a contract change order to reduce the MOE requirement". The Contractor never rescinded RFI#332.

On January 23, 2004, KFM submitted to the Department a request from Pacific for additional compensation to produce 55 MPa concrete for the precast concrete segments due to the 35,600 MPa Modulus of Elasticity requirement. The Department's response on January 30, 2004 reminded KFM of the requirements to comply with Section 10-1.27 of the Special Provisions and the Department's understanding that KFM and Pacific had agreed on October 22, 2002 "that they would comply with the contract requirements for MOE and withdraw this issue."

KFM filed a Notice of Potential Claim (#7) on March 23, 2004. The parties met on May 5 and 27, 2004 to discuss the merits of the issue and the Department subsequently advised KFM, by letter of June 9, 2004 that NOPC #7 had no merit and was denied.

The matter was referred to the DRB on June 23, 2004.

CONTRACTOR'S POSITION

Under the Contract, concrete used to produce segments must be designed to achieve many specified properties including compressive strength, modulus of elasticity, creep, shrinkage, slump, curing temperature and others. There is no requirement in the Contract Documents, nor sufficient time allowed, for pre-bid testing of concrete mixes to demonstrate compliance with all these various properties. As is typical in State contracts, concrete for the segments is designated by strength on the plans. MOE is not typically specified, so the Contract Documents instead represent a relationship between strength

and MOE that provided bidders a means to design a bid concrete mix to achieve the MOE constraint.

In preparing its bid for the segment concrete, Pacific made reasonable assumptions based upon the Contract, industry standards, and the experience of its bidding team. A key assumption made during the bid process was that the correlation between strength and MOE would be as represented by the Contract Documents. Pacific relied on this relationship while designing a mix to achieve the various concrete properties and in determining its bid price for supplying the segment concrete.

Once the Project was underway, Pacific discovered that actual test results conflicted with the Contract relationship used to design the segment concrete. Pacific notified the State that the MOE constraint was unachievable without significant and costly changes to the mix design. These changes have resulted in Pacific supplying segment concrete with strengths exceeding 80 MPa (11,500 psi), far greater than the 55 MPa (8,000 psi) strength designated on the plans. Pacific' bid mix was designed based on this 55MPa strength to achieve the specified MOE using the relationship represented in the Contract Documents. Change Order requests to either modify the MOE constraint or compensate Pacific for the necessary changes to the designed bid mix have been denied by the State.

The State has a duty, under PCC 10120, to "prepare full, complete and accurate plans and specifications" prior to entering into a contract. In this case, the Contract Documents represented a correlation between strength and MOE for bidders to rely upon, but then failed to warn bidders in any way that this relationship conflicts with the specified concrete properties. As a consequence, Pacific reasonably relied on this relationship and was misled into submitting a bid based upon a concrete mix design that achieves the 55MPa strength, as well as all the other specified properties, but is unable to achieve the MOE constraint in actual testing. It is well founded that a contractor who, acting reasonably, is misled by incorrect plans and specifications may recover for the resulting extra work.

In order to meet the MOE constraint, Pacific was required to significantly modify its bid mix design and is now supplying much more costly 80 MPa (11,500 psi) strength concrete to the Project. The State benefits from the increased strength and concrete properties in a number of ways, but refuses to compensate pacific for the increased effort and materials necessary to produce higher strength concrete. Due to misleading Contract Documents that caused changes to its bid mix design; Pacific is entitled to additional compensation for these changes under the provisions of Section 4-1.03D "Extra Work" of the Standard Specifications.

DEPARTMENT'S POSITION

NOPC 7 was not submitted in a timely manner as required by the contract. Section 9-1.04 "Notice of Potential Claim" of the Standard Specifications requires the Contractor to submit a written notice to the Engineer of a potential claim prior to the time that the Contractor performs the work giving rise to the potential claim. The Engineer received the Contractor's notice of potential claim, NOPC 7, dated March 15, 2004, on March 23, 2004, approximately 12-months after segment casting began.

Section 9-1.04 "Notice of Potential Claim" of the Standard Specifications, the second paragraph, states:

"The written notice of potential claim shall be submitted to the Engineer prior to

the time that the Contractor performs the work giving rise to the potential claim for additional compensation, if based on an act or failure to act by the Engineer, or in all other cases within 15 days after the happening of the event, thing, occurrence or other cause, giving rise to the potential claim."

The work giving rise to this potential claim was the production of superstructure concrete for the first segment cast. The first segment was cast on March 29, 2003. The Contractor is contractually required to submit a written notice of potential claim prior to performing this work. The Contractor did not meet this requirement with the submission of NOPC 7 on March 23, 2004, approximately 12 months after the production of the first superstructure concrete.

The Contractor's NOPC 7 circumstances are not supported as follows:

(1) "The specifications, within the special provisions of the contract documents are conflicting and misleading."

The contract specifications for superstructure concrete are appropriate for the type of bridge being constructed. The additional properties specified for superstructure concrete are complementary to the compressive strength requirement.

(2) "Caltrans designers, in specifying 35,600MPa MOE, used the wrong calculation."

This is not relevant. There is no calculation or equation relating modulus of elasticity to compressive strength referenced in the contract. The contract is clear as to the required mix design properties.

(3) "Modulus of Elasticity is not a common specification for acceptance of ready-mix concrete either within Caltrans or the ready-mix industry."

This is not relevant. The modulus of elasticity requirement is appropriate for this structure. Modulus of elasticity is a requied property for mix design approval only and is not used as a basis for field acceptance of concrete. KFM Letter No. 126 and State Letter No. 632 confirm this understanding.

(4) "Insufficient time to design and test mixes prior to bid."

This project had a five month advertisement period. With a 28 day modulus of elasticity requirement, the Contractor had sufficient pre-bid time to perform trial batches in order to determine if their concrete mix design conformed to the modulus of elasticity requirement.

The contract specifications for superstructure concrete are clear, consistent and appropriate for the type of bridge being constructed. Contract Bid Item No. 47 "Furnish Precast Concrete Segment" fully compensates the contractor for the work of furnishing precast concrete segments including Pacific Cement's work of supplying superstructure

concrete. The Contractor is not entitled to additional compensation to achieve the specified modulus of elasticity requirement for the superstructure concrete produced by Pacific Cement at the precast facility in Stockton.

DRB FINDINGS & CONCLUSIONS

The "Findings and Conclusions" in this report are those of the DRB Majority, Messrs. Richard Lewis and Warren Bullock and references to "DRB" or "Board" in this section should read DRB Majority. One exception to this is the reference on the last paragraph of page 6 referring to the DRB progress meeting of January 21, 2004.

1. **The Department was notified in October 2002 that Pacific requested a contract change order to modify the MOE requirement in that higher than specified compressive strength concrete was necessary to meet the MOE requirement.**

Various letters and information were exchanged prior to the meeting between the Parties of October 22, 2002. These included the results of the concrete trial mixes performed by WJE for Pacific, RFI # 332, which attached the WJE letter of September 16, 2002, and the Sundquist Engineering letter of September 17, 2002. This meeting confirmed that Pacific wanted a Contract Change Order to reduce the MOE requirement of 35,600MPa. From review of individual meeting notes (provided on request to the Board, since official meeting minutes had not been kept), it is clear that at this meeting, both the issue of the additional cementitious material required to produce the higher strength concrete necessary to meet the specified MOE, as well as the issue of whether the MOE requirement was a field acceptance test or a mix design requirement only, were discussed.

The Department's letter of October 28, 2002, acknowledged that the State considered RFI #332 and related letters to be a request for a Concrete Change Order on behalf of Pacific. The Department's letter states: "With this confirmation, it is anticipated that KFM and Pacific Cement Corporation will be rescinding RFI #332 and their request for a contract change order to reduce the Modulus of Elasticity requirement."

Pacific never rescinded this request to the State. In fact, Pacific Cement's letter to KFM dated February 3, 2003, requested "compensation to cover costs related to concrete required to meet the specified properties in the special provisions....." It appears that KFM took no action at this point in time with regard to forwarding this letter to the State and no explanation was given to the DRB as to why this did not occur.

In its letter of October 28, 2002, the Department confirmed that the Contractor must meet the requirements for
MOE, Creep and Shrinkage as specified in Section 10-1.27 of the Special Provisions, though it now appears the State lacked an understanding of the rationale or basis for the minimum MOE specified

2. **The untimely notice issue dictates that the DRB makes an assessment to determine whether the evidence presented indicates that the Department has been prejudiced as a consequence.**

The Board found that the Contractor's submission of Notice of Potential Claim #7 was untimely. However, it is the Board's responsibility to address the issue of untimely notice by first determining if the facts and circumstances provide sufficient evidence to determine whether the Department has been prejudiced as a consequence of the late notice, and if so to what extent. The Board believes sufficient evidence has been provided in this case to make this determination.

3. **The failure of the Department to make a determination as to the basis or rationale for the minimum MOE specification requirement confirms that the State was not prejudiced by the untimely notice as a reduction in the MOE requirement could only be considered after this information was known.**

KFM's letter of January 23, 2004, with attached letter from Pacific, dated January 9, 2004, requested a Contract Change Order for compensation of the increased costs to produce concrete for the precast segments to achieve the specified Modulus of Elasticity. Also attached to the KFM letter were letters to Pacific from WJE dated September 16, 2002 and Sundquist Engineering dated May 5, 2003.

The Department effectively denied KFM's request for issuance of a Contract Change Order in its letter of January 30, 2004, apparently without having an understanding of the rationale or the basis for the minimum MOE specified. On March 23, 2004, KFM filed its Notice of Potential Claim. Meetings between the parties took place on May 5 and 27, 2004, to discuss the merits of the NOPC (#7) and the Department's letter of June 9, 2004 advised the Contractor that the NOPC had no contractual basis, had no merit and was denied.

Upon receipt of KFM's letter of January 23, 2004, and most certainly after receipt of NOPC #7, the State had a clear duty under the implied contract obligation of mutual co-operation to commence investigation of the possibilities of mitigating the impact of the MOE requirement.

The Department appears to have taken no meaningful mitigation action such as, inquiries to the designers, or analysis of the rationale and the basis for the specified MOE requirement, following the January 23, 2004 request for CCO, or the submittal of NOPC #7 on March 23, 2004.

From a handout at the DRB progress meeting of January 21, 2004, the meeting notes confirm that as of the week ending January 16, 2004, the Contractor, at its Stockton precast facility, had cast 18.81% of the segments (85 of 452) and 21.80% of the lightweight panels. Thus, when the January 23, 2004 request for a CCO was submitted by KFM, there was still ample opportunity and reason (approximately 80% of the segments yet to be cast) to take mitigating action with regard to the impact of the MOE requirement.

The fact that the Department took no mitigation action after the receipt of the January 2004 correspondence or the filing of NOPC #7 demonstrates that it is highly improbable

that the State would have done anything differently had the NOPC been filed before segment casting began in late March 2003. Even as late as the DRB hearing on this NOPC the Department could not provide the DRB with an understanding of the basis or the rationale for the minimum MOE requirements in the specifications.

If a Contractor's notice of potential claim is untimely and the Owner provides proof that it was prejudiced by the late notice, in that it was prevented from investigating the matter and from exercising potential mitigation action and thereby limiting the damages, then the late notice can be a determining factor. On the other hand if an Owner is not prejudiced, even if it was denied mitigating opportunities under the particular circumstances, untimely notice may not be a determining issue in establishing entitlement or damages.

Notice requirements such as Section 9-1.04 of the Standard Specifications may not necessarily be the determining factor in establishing entitlement. There is clear "weight of authority" to support this premise.

The State's apparent lack of action to thoroughly investigate and determine the basis of the MOE specification implies that no mitigation was likely to have occurred, irrespective of when an NOPC was filed. The fact that the Department took no action after receiving NOPC #7 is a strong indication that it was not prejudiced by the untimely notice.

The Board notes that as with differing site conditions claims, claims with entitlement on the basis of defective specifications are evaluated by the courts with leniency regarding the issue of timely notice.

The Board concluded there is ample evidence to confirm that the untimely notice by the Contractor was not a determining factor in this issue. However, the Contractor's apparent failure to forward Pacific's "Notice of Claim" letter to KFM of February 3, 2003, onto the State will be taken into consideration by the DRB in making its Recommendation to the parties.

4. **The contract plans, specifications, "Informational Handout" and referenced documents, as well as design documents, all correlate to confirm the relationship between concrete compressive strength and MOE utilized by Pacific in its bid estimate.**

The contract Special Provisions at Section 10-1.27 CONCRETE STRUCTURES at the Sub-section SUPERSTRUCTURE CONCRETE states in part that "The concrete mix for the superstructure concrete shall be designed to achieve the following additional properties:

A. Modulus of Elasticity: The modulus of elasticity of Portland cement concrete shall be at least 35,600 MPa at 28 days when tested in accordance with the Requirements in California Test 522."

The same Subsection also requires the superstructure concrete to be designed for specified Creep and Shrinkage properties.

Contract Plan Sheet 436 R1, references The Caltrans Bridge Design Specifications, December 31, 1995 (BDS), The BDS, at Section 8 - REINFORCED CONCRETE,

Subsection 8.7 MODULUS OF ELASTICITY AND POISSON'S RATIO quote a formula for calculating the modulus of elasticity in concrete utilizing the specified compressive strength of concrete and the weight of concrete . The Contractor testified that it relied on this formula in developing its mix design at time of bid.

The Department correctly argued that Section 8 is not applicable in this case and that Section 9 PRESTRESSED CONCRETE is the appropriate section for the design of prestressed concrete bridges. However, under Subsection 9.16.2 Prestress Losses, in calculating Elastic Shortening, (Clause 9.16.2.1.2), the same relationship as in Section 8, is utilized for calculating MOE of concrete at transfer of stress. Subsection 9.1 APPLICATION states that "Exceptionally long span or unusual structures require detailed consideration of effects which under this Section may have been assigned arbitrary values."

The Department argued that in line with Subsection 9.1 an arbitrary value for MOE may have been assigned by the designer. However, the Department confirmed at the hearing that it did not know how the specified MOE of 35,600 MPa had been arrived at.

The Board found, in this instance, that after three days of DRB hearings and almost eighteen months since the change order request on January 23, 2004, the State still apparently had little or no information explaining the reasonableness of the MOE specification or account for its development.

Further, the Department could not provide satisfactory evidence to explain the apparent differences between the MOE used in the design calculations and the MOE called for in the specification. The Board could only conclude that either the State made insufficient effort to discover the answer to these legitimate questions or the answers it received did not support the Department's position. It appears from evidence submitted in the Contractor's Supplemental Position Paper that the designer may have used the same formula in its calculations regarding MOE as is referred to in the BDS.

The Department made reference to the Design Criteria – Skyway Structures (March 21, 2001) prepared by T.Y. Lin International/ Moffat & Nichol Engineers. This document was made available to bidders in an "Informational Handout" to assist them in preparing ing their bids. The introductory paragraph of this document states "The bridge shall be designed in accordance with "Caltrans Bridge Design Specifications Manual (1995) (BDS)," modified or augmented as detailed in this design document."

The Modulus of Elasticity was not stipulated in the "Design Criteria" nor could the Board find reference in this document to any modification of the BDS in this regard. The "Design Criteria" further states: "In addition to bridge and site specific criteria, pertinent sections of the following standards or codes have been employed for such modifications or augmentations."

One of the standards listed in the "Design Criteria" is the "AASHTO Guide Specifications for Design and Construction of Segmental Concrete Bridges", 1999 Edition. Further references to the use of this AASHTO standard are made in the "Design Criteria" at Section 3 CONCRETE - SEGMENTAL SUPERSTRUCTURE and 3.3 MATERIALS.

This AASHTO document at Section 2.0 CONCRETE, Subsection 2.4 Tests for Modulus of Elasticity, and Creep and Shrinkage Coefficients, states:

> "In most cases, values of modulus of elasticity and creep and shrinkage coefficients can be estimated with sufficient accuracy by reference to the ACI Committee

209 Report or the CEB-FIP Model Code for Concrete Structures. For large projects involving bridges sensitive to creep and shrinkage effects, and for bridges constructed of sand light-weight concrete, tests shall be performed in accordance with the provisions of this section to determine concrete modulus of elasticity, and creep and shrinkage coefficients for the selected mix design. The test data shall be obtained at the earliest possible time during the contract period for use in adjusting the design values and the related calculations of structural deflection and geometry control."

The ACI Committee 209 Report, referred to above, at Subsection 2.2.2 Modulus of rupture, direct tensile strength and modulus of elasticity, utilizes the very same formula using specified compressive strength and weight of concrete for developing MOE, as used in the BDS.

The Department argued that all these various document references are related to engineering design and should not be used for construction purposes. However, the DRB notes that the AASHTO document is a guide specification for both the Design **and Construction** of segmental concrete bridges. (emphasis added)

The specification requirement to design a concrete mix to achieve a stipulated MOE was unusual and neither an industry nor a Caltrans standard. If the Department (including its Design Consultants) knew that the compressive strength of the concrete would have to be significantly greater than specified (70 -80MPa v 55MPa) in order to satisfy the specified MOE requirement then it had a duty to so inform bidders and to warn them not to rely on the relationship between MOE and compressive strength indicated in the contract documents. Absent such warning the Department must have felt that achieving the specified MOE utilizing the specified compressive strength of 55 MPa was achievable. Based on hearing testimony and a draft report titled "Bay Bridge High Performance Concrete Mix-Design, Compressive Strength and Drying Shrinkage Testing" (undated) it appears that Shrinkage was a primary concern to the State prebid whereas, apparently, MOE was not.

The Board concluded that the Contractor at the time of bid had the right to rely on the indications given in the contract documents and that the specified MOE would be achievable in designing its 55 MPa concrete mix.

5. ACI 363R, State-of-the-Art Report on High-strength Concrete addresses the relationship of concrete compressive strength and MOE values for high - strength concrete.

The Department argued that ACI 363R, State-of-the-Art Report on High-Strength Concrete, was available to contractors at time of bid. This report, referred to in the WJE letter to Pacific Cement, dated September 16, 2002 and transmitted to the State on October 18 & 21, 2002, states: "The ACI 318 expression overestimates the modulus of elasticity for concretes with compressive strengths over 6000psi (41MPa)....."
(It is noted that ACI 318 utilizes the same formula, using the relationship between specified compressive strength and weight of concrete in calculating MOE, as is used in the BDS).

The Department and its designers should have been aware of the information contained in ACI 363R with regard to the relationship between concrete compressive

strength and MOE values for high-strength concrete (compressive strength in excess of 41MPa) and warn bidders that the relationship (formula) indicated in the contract documents may overestimate the MOE values compared to those realized from actual concrete tests performed.

While ACI 363 R at Chapter 5, Clause 5.3 – Modulus of Elasticity, might have raised a red flag with Pacific, this report is neither a contract nor a specifically referenced document. Had its contents been known to Pacific at time of bid it would have increased its bid price to KFM. It did not and as a result the Department has received concrete of significantly higher strength than specified, and with other attendant benefits, for no additional cost.

6. The CRM circumstances are not relevant to Pacific's claim.

The Department provided evidence and testimony that it was possible to receive approval for a concrete mix design meeting all the requirements for Superstructure Concrete using 8.5 sacks of Type II cement. Pacific testified that it spent in excess of $100,000 on the trial batching and testing of numerous concrete mix designs and found that only its mix designs with 9.8 sacks of cementitious material per cubic yard using Pronto Type II cement were capable of meeting the specified MOE requirement. Pacific further testified that fine tuning of their 9.8 sack approved mix design during the course of the work was not possible because this mix barely met the minimum MOE requirement.

CRM (KFM's concrete supplier at the bridge site) had obtained approval for an 8.5 sack mix with Type II cement. However, CRM's and Pacific's coarse aggregate sizes, cement manufacturers and concrete admixtures were all different and the Board concluded that these were sufficient differences to discount the State's argument. The Board found, for the same reasons, that the fact that CRM had not filed a notice of potential claim when it had to comply with the same contractual requirements for compressive strength, modulus of elasticity, creep and shrinkage, had no relevance to Pacific's claim.

7. It is not reasonable for a concrete supplier to be expected to perform trial batch testing to ensure compliance with all the specific contract requirements for this contract.

The Department held that given the 5-month contract advertisement period that Pacific had opportunity and ample time to perform trial batches to verify its bid-estimate concrete mix design to see that it complied with the 28 day modulus of elasticity requirement.

The Board concluded that since there was no contractual requirement for pre-bid concrete mix design testing and that there was insufficient time to conduct the full range of tests required for a particular mix design,(Shrinkage and Creep tests require 180 and 365 days respectively) the Contractor had no alternative other than to rely on the indications in the contract documents, industry standards and its own experience, in designing its 55 MPa concrete mix.

DRB RECOMMENDATION

The DRB Majority recommends that the Contractor be compensated, under Section 4-1.03 CHANGES, of the Standard Specifications, for the additional cementitious material (9.8 v 8.5 sacks), as well as the additional costs of "Pronto" Type II cement over "regular" Type II cement, necessary to meet the specified Modulus of Elasticity requirement of 35,600MPa at 28 days in segment concrete, supplied at its Stockton precast facility, by Pacific Cement.

The DRB Majority believes the Department was not prejudiced by the Contractor's untimely notice. However, KFM's failure to forward Pacific's notice letter of February 3, 2003, onto the State, delayed and potentially jeopardized the timely resolution of Pacific's claim, thus contributing to Pacific's apparent default of its contract with KFM. Consequently, the Board Majority recommends that the additional costs incurred by Pacific prior to the Contractor's submittal of NOPC#7 on March 23, 2004, remain a matter to be resolved between KFM and Pacific Cement.

Respectfully submitted,

Warren M. Bullock DRB Member	Richard A. Lewis DRB Member

Dated:

Minority

Opinion

Minority Recommendation

I would recommend denial of the claim for the following reasons:

1. Failure to Submit a Timely NOPC

The matter of the concrete mix or mixes meeting the MOE requirement of 35.600 MPa was discussed by the parties on October 22, 2002. Prior to that meeting, RFI #332 dated October 21, 2002 was submitted to the State. This RFI included letters from the Contractor's concrete consultants WJE (September 16, 2002) and Carl Sundquist (September 17, 2002) which included statements such as " ...If the specified MOE is required, than (sic) the compressive strength of this concrete must be targeted at over 75 to 80 MPA" (WJE), and "..A contract change order should be requested to change the MoE to an acceptable limit that will produce concrete for the subject bridge that will provide the required strength, MoE, and drying shrinkage without requiring excessive quantities of Pronto cement". (Sundquist).

Thus the issues before the DRB now were before the parties in September/October 2002.

On October 23, 2002, the Contractor acknowledged a "very open and productive meeting" of the State, KFM and its concrete suppliers and confirmed that the State had agreed that the minimum MOE requirement was a mix design requirement and not a field acceptance requirement. On October 28, 2002, the State confirmed the mix-design-testing agreed upon and stated the anticipation "...that KFM and Pacific Cement Corporation will be rescinding RFI No. 332 and their request for a contract change order to reduce the Modulus of Elasticity requirement".

There was no response from the Contractor to the October 28, 2002 letter. The first bridge segment was cast on March 29, 2003. NOPC 7 was submitted on March 23, 2004.

The NOPC did not comply with the timeliness requirements of the contract. (Std. Spec. section 9-1.04). It violated the intent of the contract "...that differences between the parties arising under and by virtue of the contract be brought to the attention of the Engineer at the earliest possible time in order that the matters may be settled, if possible, or other appropriate action promptly taken".

Five months before the first bridge segment was cast, "other appropriate action" might conceivably have been taken.

2. **Non-Rescission of a Request for a Contract Change Order does not Constitute a valid NOPC.**

On its face, RFI #332 does not request a contract change order. There is no such request by KFM, and there is no attached letter from Pacific requesting a contract change order. The September 17, 2002, letter from Sundquist attached to the RFI states that a "contract change order should be requested" (emphasis added). The State in its October 28, 2002, letter acknowledged this tenuous change order request and anticipated that the meeting of October 22, 2002, and the agreement reached regarding mix design testing (rather than production testing) had obviated the need for a change order.

The Contractor did not respond to the October 28, 2002 letter. The Contractor's response to the State's October 28, 2002 letter should have been a) a "formal" request for a change order, or b) a filing of a notice of potential claim within 15 days of the State's failure to act on the change order request. The NOPC would have had to be on Form CEM 6201, as required by the contract. None of this happened.

A "formal demand for cost increases" was made by Pacific in its letter to KFM dated January 9, 2004. KFM forwarded this letter to the State as a change order request on January 23, 2004. A Pacific request to KFM a year earlier, on February 3, 2003, for "compensation to cover costs related to concrete required to meet the specified properties of the special provisions" was not forwarded to the State by KFM with an appropriate cover letter.

3. **The Issue of Prejudice to the Department because of the untimely NOPC is not before the DRB.**

In arbitration or court proceedings where discovery steps can be taken to fully explore the matter of prejudice suffered by the owner due to untimely submittal of a NOPC, such prejudice, or the lack thereof, may influence the ruling of the arbitrator or judge.

In this DRB proceeding, no facts were adduced to show prejudice or the absence thereof. The Contractor, trying to avoid the untimely-NOPC defense, would have the burden of showing that the State was not prejudiced. The Contractor did not do so. The Contractor's response to the untimely-NOPC defense was limited to reiterations that his request for a change order was not rescinded. There are no facts that support a finding that the State was or was not prejudiced – either at the time the NOPC could have and should have been filed (October/November 2002, if not earlier) or up to the time the NOPC was filed (March 24, 2004).

4. **The Plans and Specifications were not Defective.**

Special Provisions section 10-1.27 unambiguously requires the "additional" properties of MOE (35,600 MPa at 28 days) as well as certain creep and shrinkage

(not germane in this DRB proceeding). This minimum MOE value, as well as the required minimum compressive strength, were achievable. They are being achieved without the need for any contract modification.

5. Published Formulas Correlating Compressive Strength and MOE do not Support the Contention of Defective Contract Documents.

The Contractor takes references in the contract documents to a "Bridge Design Specifications Manual" to find a "contractual formula" for the relationship between the compressive strength and the MOE. The minimum compressive strength required in the contract and the minimum required MOE do not fit into the formula: therefore the contention of defective specifications. (The formula stated in Bridge Design Specifications 8.7.1 is also shown in other national concrete documents published by ACI and AASHTO).

The "Bridge Design Specifications Manual" states that "The specifications of this section [Section 8 – Reinforced Concrete] are intended for design of reinforced (non-prestressed) concrete bridge members and structures. Bridge members designed as prestressed concrete shall conform to Section 9."

Section 9 – Prestressed Concrete of the "Bridge Design Specifications Manual" states under 9.1.1 – General: " Exceptionally long span or unusual structures require detailed consideration of effects which under this Section may have been assigned arbitrary values". (Emphasis added).

It may well be that the designer "arbitrarily" enhanced the MOE value of the concrete sections for the long spans of the Skyway.

6. The State has no Duty to Justify its Design to the Contractor or to Alert the Contractor of Deviations from Certain Design Standards.

If the structure as designed can be built, it should not be a concern of the Contractor how the structure was designed or why there were deviations from standard expectations. A reasonable, diligent contractor should notice these deviations in preparing his bid

If deviations (perceived by the contractor to make the performance of the work more costly) are noticed prior to bid, there is the bidder's obligation of pre-bid inquiry. If the deviations are noticed after bid, there is the obligation of filing an appropriate, timely notice of potential claim for what the Contractor considers to be unexpected additional costs of performing the work.

Sundquist's letter of May 5, 2003, to Central Concrete Supply Company, Inc. (part of Attachment 3D of State's Position Papers) states

> " At the time of preparing the bid the concrete industry in this area and most of the United States did not have any experience with concrete required to have a

Modulus of Elasticity (MOE) of 35,600 MPa at 28 days. That requirement is included in the Project Special Provisions Section 10-1.27".

My interpretation of this letter is that the contract MOE requirement and the industry's lack of experience with such an MOE requirement were red flags to Sundquist at bid time. Yet, no red flags were raised (looking at the evidence before the DRB) to Pacific or KFM or the State prior to bid or after award of the contract until September 2002, nine months into the contract.

7. The Contractor's NOPC 7 dated March 15, 2004 (transmitted to the State on March 23, 2004) are Defective.

On the face of the NOPC, the Contractor describes the "particular circumstances of this potential claim ...as follows:"

> "1) The specifications, within the special provisions of the contract documents are conflicting and misleading"

When did the Contractor become aware of the conflicting and misleading specifications? The NOPC form does not indicate a date – as required - for the occurrence of the "act of the engineer, or his/her failure to act, or the event, thing, occurrence, or other cause giving rise to the potential claim.

It should be noted that Pacific Cement's subcontract with KFM was dated August 2, 2002 and signed by the parties on August 30, 2002. The subcontract required, inter alia, that

> "Seller [Pacific Cement] will be responsible for all qualification testing required of the various concrete mixes."

Sundquist and WJE expressed their concern regarding the MOE requirement two weeks after the signing of the subcontract. (Letters of September 17, 2002, and September 16, 2002, respectively). The DRB is not privy to concerns, if any, expressed by Sundquist or WJE prior to or at the entering of the subcontract.

> "3).Modulus of Elasticity is not a common specification for acceptance of ready-mix concrete either within caltrans or the ready-mix industry."

The matter of production acceptance testing was laid to rest after the October 22, 2002 meeting. What is the point in March 2004? The fact of the MOE testing was clearly spelled out in the Special Provisions. If it is not a common specification in the industry, it should have raised a red flag to the bidding contractor and his concrete advisor(s).

> "4).Insufficient time to design and test mixes prior to bid."

The Contractor and Subcontractor were well aware, or should have been well aware, of the time constraints regarding design and testing of concrete mixes. How did the Contractor evaluate this lack of time and the "not a common specification in the industry" in submitting his bid? I would assume that by August 30, 2002, when Pacific Cement signed the subcontract without reservations, Pacific was satisfied that it could comply with the contract requirements regarding the concrete.

I believe a comment is in order regarding the Contractor's Public Records Act requests for State's records which he believes will support his claim contentions. A considerable amount of hearing time was taken up by the Contractor's recitation of his futile efforts to have his Public Records Act requests fully complied with. (The latest non-production-of-records letter from Pacific's claims consultant was forwarded to the DRB members on September 2, 2005).

The actual or perceived non-compliance by the State with the records request was characterized as the gamut from "uncooperative" to "an effort to conceal evidence that would prove unfavorable to their position".

While the Contractor has every right to request the State's records, it behooves him to follow the procedures spelled out in the Public Records Act. The designated public records officer of the State (Chief, Public Affairs) responded to the Contractor's requests on March 4, 2005. Whether or not the response was correct, the Public Records Act (Government Code sections 6250 to 6270) provides for such procedure. The public agency must respond to the request within 10 days (Section 6253 (c)). Section 6255 requires that the public agency must justify its withholding of records. The public agency's records decision is reviewable by the courts in proceedings for injunctive or declaratory relief or writ of mandate (Section 6258). If the record requestor prevails in court, the court "shall" award court costs and attorney's fees (Section 6259 (d)).

The Contractor did not avail himself of the remedies provided for in the Public Records Act, and I would urge him to do so if he still believes that records are withheld from his inspection.

Respectfully submitted,

Frederick Graebe
DRB Member

Doug Coe
01/27/2006 09:48 AM

To: Reba Torres/D04/Caltrans/CAGov@DOT
cc:
Subject: Contract 04-012024- DRB Recommendation, NOPC#11

----- Forwarded by Doug Coe/D04/Caltrans/CAGov on 01/27/2006 09:46 AM -----

WMLM@aol.com
01/26/2006 02:23 PM

To: Doug_Coe@dot.ca.gov, chris.villa@kfmjv.com
cc: FGraebe@aol.com, dicklewis1@cox.net, Lee.Zink@KFMJV.com
Subject: Contract 04-012024- DRB Recommendation, NOPC#11

Gentlemen, Attached is the DRB's unanimous Recommendation to assist in the resolution of NOPC#11- Hinge Pipe Beams. It is the Board's plan to deliver the signed hard copy of the Recommendation to the parties at the DRB Meeting next Tuesday, January 31, 2006. This will then be the date when the various contract specified time periods will begin to run. Sincerely, Warren Bullock- DRB Chair

NOPC 11 Final 012606.dc

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62.02.11

DISPUTE REVIEW BOARD

State of California- Department of Transportation

Contract Number 04-012024 – East Span Skyway Project

Dispute No. 5 – Notice of Potential Claim #11 – Hinge Pipe Beams

Hearing Dates: November 17, 18 and December 5, 6, 2005.

Hearing Attendees: Caltrans' Representatives:

Peter Siegenthaler	Brian Maroney
Doug Coe	Dr Alan Pense- ATLSS, Lehigh University
Don Ross	Doug Williams – TY Lin/MN
Jim Merrill	Sajid Abbas – TY Lin/MN
Doug Wright	Nancy Bobb-FHWA –11/17 only
Venkatesh Iyer	
David Wu	
Mark Woods	
Patrick Treacy	

Contractor Representatives:

Lee Zink	Dr Robin Gordon-EWI MicroAlloying
Kent Boden	Matt Nousak- Middough Consulting Inc
Paul Giroux	William Kavicky- Trans Bay Steel
Kevin Rozendaal	Jay Murphy- Trans Bay Steel

BACKGROUND

The East Span Skyway Project consists of two superstructures (Eastbound and Westbound) consisting of a total of 452 precast concrete girder segments utilizing balanced cantilever construction for a total of four rigid frames including fourteen piers per superstructure. The substructure includes steel box/reinforced concrete footings supported on cast-in-shell concrete piles.

The project includes 20 hinge pipe beams (HPBs) between the frames of the superstructure to allow for thermal expansion and seismic movements. Two HPBs are installed at each hinge. The HPBs are about sixty feet long and six feet in diameter, fabricated from HPS 70W steel plate up to 4inches thick (65mm. 85mm and 100mm plate thicknesses).

The California Department of Transportation (hereinafter referred to as the "State", "Department", "Engineer", or "Caltrans"), awarded the contract for the East Span Skyway Project (Contract Number 04-012024) to Kiewit/FCI/Manson, JV, (hereinafter referred to as "KFM", or "Contractor"), on January 17, 2002.

The Contractor initially selected Struthers Industries Inc.,/Irby Steel (herein after referred to as "Struthers") to fabricate the 20 HPBs. During the course of the contract Struthers filed for bankruptcy and KFM consequently awarded the fabrication contract to TransBay Steel Corporation (hereinafter referred to as "TransBay" or "TBS") on November 3, 2003.

DESCRIPTION OF DISPUTE

On September 7, 2004, TBS transmitted a letter advising KFM that during production, several of the longitudinal seam welds on the hinge pipe beams had experienced separation after re-rolling. TBS further indicated that its approved welding procedure for the longitudinal welds on the pipe beams was written in accordance with the special provisions. TBS also stated that its fabrication procedure was designed to meet the tight tolerances for roundness and curvature and that to its knowledge, the only way to meet the tight tolerances was by re-rolling each can after the longitudinal seam weld had been completed. TBS stated that it intended to request a time extension and cost increases as a result of the necessary weld repairs. KFM submitted the TBS letter to the Department on September 10, 2004.

The Department responded by letter dated September 20, 2004, advising the Contractor that the rolling equipment and methodology were part of TBS's and KFM's means and methods, and they were responsible for developing a fabrication procedure that would produce the pipe beams without damage. Since this was within TBS's and KFM's scope of work no time or cost increases to the Department could be justified.

As a result of the State's response TBS filed a Notice of Potential Claim with KFM on September 29, 2004, and this was submitted to the Department on October 1, 2004. The State advised KFM by letter dated October 15, 2004, that the Engineer had determined NOPC #11 to be without merit.

In a letter dated October 29, 2004, TBS requested KFM to forward this issue to the Dispute Review Board and at the same time offered additional information which included TBS's belief the plate material specified for the HPB's to be the wrong choice, the weld material specified for the HBP long seams to be the wrong choice and the PQR procedures in the special provisions did not represent the true stresses. KFM forwarded this TBS letter to the Department on October 29, 2004 and NOPC #11 was referred to the DRB by KFM on November 3, 2004.

Meetings between TBS/KFM and the Department occurred, to discuss concerns of the possibility that the weld filler material over-matched the base metal. TBS/KFM contended the over-matching contributed to the causation of cracks and the Department confirmed its willingness to change the welding wire in a letter dated December 22, 2004.

In addition to the daily contact of TBS, Caltrans' inspectors and QC/QA personnel, numerous summit meetings to discuss the can fabrication problems were held with Caltrans, KFM, TBS, QC/QA personnel and various consultants. Summit meetings to discuss the issues and develop alternative methods and procedures to resolve the problems occurred on October 4, 2004, November 1, 2004, January 4, 2005, February 11, 2005, March 9, 2005, March 11, 2005 and April 13, 2005. TBS's letter of March 11, 2005 summarized the various alternative procedures that were proposed to mitigate the cracking and also included a summary of the toe crack data. Caltrans' letter of March 25,

2005 noted that "hot" (warm) rolling at temperatures between 425 degrees C and 590 degrees C would require that the PQR plate be similarly treated and its mechanical properties tested before being used in production. This letter also expressed Caltrans' concerns about TBS's ability to maintain the specified temperature range given its logistical and equipment resources. During the period from the filing of NOPC #11, TBS continued to attempt to fabricate and perform repair on cans for the hinge pipe beams with limited success. Also, destructive test samples were taken from the rolled cans and tested extensively by KFM's consultants.

On February 25, 2005 and March 2, 2005, TBS successfully met the tolerance requirements and delivered the eastbound D pipe beams.

On April 15, 2005, TBS informed KFM that it had ceased all rolling and long seam welding operations on April 13, 2005, following a meeting with Caltrans, METS and KFM to discuss the issues surrounding the long seam welds. TBS indicated that at the meeting all parties acknowledged there was a material problem with the HPBs and agreed to work towards a solution. TBS's letter was forwarded to the State the same day.

The Department responded on April 21, 2005, advising KFM that the State believed TBS had not exhausted all of its options regarding changes to its fabrication methods and requested TBS to return to work. Further, since TBS had not exhausted all its options to resolve its fabrication problems the State did not agree with its actions nor its interpretation of the April 13, 2005 meeting.

In a follow-up letter on April 27, 2005, the Department urged TBS to return to work, and offered additional suggestions to help correct the TBS fabrication issues, primarily the crack repairs to the B and C series HPBs.

TBS responded to the State's letter of April 21, 2005, in its letter to KFM dated April 27, 2005. TBS sought to clarify specific items in the Department's letter, as well as confirming its belief that the root cause of the cracking problem was in the choice of base material and filler material.

On May 6, 2005, the Department directed TBS to return to work and to incorporate certain specific directions into its fabrication procedures. A Contract Change Order would be issued for the specifically directed work. The directions were to apply only to the work on the longitudinal seams of the 100mm thick cans. The Department also stated that since all the fabrication options had not been exhausted before ceasing work, the related costs of stopped production for the previous two weeks would not be the responsibility of the State.

At a May 12, 2005 summit meeting, KFM indicated to Caltrans that the proposed solutions to the fabrication process may very likely not work and could in fact ultimately delay the project. The Engineer responded that "this was part of the due diligence that Caltrans was required to make in order to try everything to get the original design to work."

On June 17, 2005, the Department, in accepting KFM's April 2005, revision schedule also requested responses to Department comments, including details of the "critical" portion of the "Pipe Beams:Fabrication" work activity. In a separate letter, also June 17, 2005, the Department responded to KFM's June 14, 2005, request for a time extension for delays experienced in the pipe beam fabrication, advising KFM that contract time extensions could only be granted when the delay was beyond the control and without the fault of the Contractor. Since NOPC #11 dealt specifically with this issue

time extensions would only be considered pending its resolution and analysis of possible mitigation measures.

In describing certain extra work to be included in CCO #160 in a letter dated June 20, 2005, the Department also directed TBS to accelerate the work to be able to deliver the two pipe beams for Eastbound Hinge C as quickly as possible. TBS acknowledged receipt of this letter the same day and confirmed it would proceed with the additional work and its acceleration.

On August 1, 2005, the Department advised the Contractor that despite its prior directions to work longer and additional shifts, TBS, as of that date, was continuing to work only two shifts of eight hours and the second shift had typically only two or three workers. The Department further advised KFM that the then current rate of progress at TBS was not acceptable and reminded KFM of its responsibilities under Sections 5-1.01, 8-1.07, and 8-1.09 of the Standard Specifications. TBS was to proceed with the ordered work without delay and if it did not any resulting schedule delay from lack of acceptable progress would be the sole responsibility of the Contractor. The Department finally directed that work be performed 24 hours per day 6 days per week and requested KFM to submit a CPM schedule demonstrating what steps had been taken to mitigate delays.

The same day, August 1, 2005, KFM's letter advised the State that TBS continued to increase personnel to provide the acceleration to mitigate the ongoing project delay and to react to the changing requirements and that TBS and Caltrans had added QC and QA UT inspectors to stay ahead of the welders.

KFM responded to the Department's letter of August 1, 2005 on August 11, 2005, advising it had agreed to provide the requested schedule and further advised that KFM had provided preliminary project recovery schedules that might mitigate the delay from –142 to –59 days. The recovery schedules were based on the implementation of certain changes to other project activities and KFM sought the Department's direction as to selection of the appropriate recovery schedule.

On August 12, 2005, the State advised KFM that according to the Department's observations KFM and TBS had not been working actively over the previous few weeks to mitigate delays and that TBS was working very little on the delivery of pipe beams for Eastbound Hinge B, Westbound Hinge D and all other future pipe beams. The critical operation for delivery of the future pipe beams was rolling and re-rolling yet the TBS rolls had been idle for nine of the previous ten days. Further the Department had not yet been provided with the requested resource loaded CPM schedule.

On August 17, 2005, KFM responded to the Department's August 12, 2005 letter advising that the BE beam had been re-rolled and that the critical activity was in fact clearing the long-seam weld repairs and the DW beam was on hold awaiting the State's decision on the type of weld wire to be used, following testing of alternative weld wires.

Then on August 18, 2005, the Contractor advised that Department, that as the Department was aware, KFM had assembled a group of experts from across the country with expertise in materials engineering, welding and metallurgy. The group's mission was to evaluate and provide guidance regarding the ultrasonic indications found in the longitudinal weld of the HPB's after re-rolling. The experts started a materials testing program on January 20, 2005 and the results were forwarded in a report to Caltrans on April 13, 2005. KFM's experts performed a second test program, witnessed by Caltrans, May 17 through May 20, 2005. KFM's panel of experts made a presentation of its

findings to the Department on June 24, 2005 and a formal report was transmitted on July 6, 2005. Consistent with its experts' recommendation, KFM tested additional materials, also witnessed by Caltrans, during the week of August 1, 2005, and on August 12, 2005, KFM's panel of experts presented its updated findings to Caltrans.

KFM's "approximate order of magnitude" claim under NOPC # 11 ranges from $50.284M to $88.288M, including TBS's direct and delay costs, based on delays of 48 to 140 days to the project critical path.

CONTRACTOR'S POSITION

The following is a summary of the basis of entitlement. Full details of KFM's position are included in its Position and Supplemental Position Papers.

The dispute is whether the State provided directions for fabrication of the hinge pipe beams that would allow a competent mechanic to perform the work.

Special Provisions section 10-1.44 requires that "The Contractor shall fabricate pipe beams in accordance with the approved fabrication procedure conforming to the requirements of these special provisions." TBS's plan was reasonable and prudent. The State approved TBS's fabrication plan that detailed all equipment and methods including re-rolling the pipe sections after longitudinal seam welding. TBS's facility was approved by Caltrans during the steel Audit. TBS is also AISC approved for fracture critical members.

The State and the State's Designer worked with KFM from August 2002 until September of 2003 to conform plan sheet section G-G to the governing Special Provision tolerances. After considering many options, CCO #30 was issued by the State ordering two additional restrictions to pipe tolerances. Effectively, CCO #30 reduced the out-of-round tolerance by 50%. Re-rolling pipe sections was necessary both before and after the change.

Beginning in August of 2004, the longitudinal seam UT test results showed excessive indications requiring excavation and re-welding. The added work to date has caused a 28 week job delay that was mitigated to a 12 week job delay.

TBS worked with the State, State's Designers, KFM and its experts between October 2004 and now, (October 2005) brainstorming solutions to the excessive UT indication issues. Late April 2005, the State ordered many CCO #160 experiments that varied the work plans exhausting the final viable options for resolving the issues. Finally, Caltrans ordered changes relaxing the longitudinal weld UT requirements and eliminated the RT requirements allowing the project to move forward.

Since October 2004, KFM has employed the assistance of experts in the fields of metallurgy, fracture mechanics and welding. Exhaustive testing has been employed to understand the base metal properties such that KFM's experts are now referred to as "world experts" regarding the thru-thickness properties of 100mm HPS 70W steel. Both PW Marshall (primary author of AWS – D1.1 Tubular) and Allen Sindel (Co-chair AWS – D1) have requested KFM's experts to author a paper for the ISOPE 2006 and AWS on the HPS 70W through-thickness properties. The experts are in complete agreement that the specified fabrication process exhausts the ductility of the HPS 70W base metal and UT indications are to be expected after re-rolling.

Per Caltrans Plans, Specifications and Estimates guide, "The fundamental requirement for Caltrans to provide quality PS&E's is found in Section 10120 of the State Contract Act. It states, "Before entering into any contract for a project, the department shall prepare full, complete and accurate plans and specifications and estimates of cost, giving such directions as will enable any competent mechanic or other builder to carry them out."

TBS followed the directions given in the plans and specifications and the directions did not produce a satisfactory result. The landmark case of United States v Spearin, 24B U.S.132 (1918), and later cases hold that an owner furnishing contract documents to prospective bidders impliedly warrants the accuracy of any factual representations and the adequacy of the specified design, materials and methods.

The awarding authority providing plans and specifications for a project impliedly represents that the design, materials, and methods prescribed in the plans and specifications will yield a satisfactory result. In other words, the awarding authority should be held responsible if the plan was not workable or produced a poor result. A breach of the implied warranty occurs when a project, although constructed in accordance with the plans and specifications, contains material defects or cannot be completed without using a more expensive design or method than specified. For a breach of the implied warranty of suitability, KFM/TBS can recover cost for remedial work performed on the project and the additional delays or impacts caused by the breach.

KFM and TBS are entitled to compensation for the additional costs caused by the inadequate directions to perform the work.

DEPARTMENT'S POSITION

The following is a summary of the Department's position. Full details are included in its Position and Supplemental Position Papers.

The Department has determined that there is no merit to KFM's claim for additional compensation for the required repairs because the specifications primarily set forth the performance standard the finished product is required to meet. The Contractor made its own business decisions in choosing fabricators, equipment, and processes in an attempt to comply with the contract requirements. These decisions affected the Contractor's ability to meet their schedule, caused equipment breakdowns, and caused an excessive amount of repairs. The Department cannot be held responsible for the delays and costs associated with the chosen means and methods.

The Davi rolls have had two major breakdowns lasting two months each totaling sixteen weeks of delay. Because of the fabrication methods chosen, the Department has allowed modifications to the specifications to accommodate the Contractor and to keep the project moving. As a result, the Department's actions have minimized the damages incurred by KFM and TBS.

The Contractor has claimed that their means and methods should have worked without delay, without modification and without repairs. The Contractor has cited the public contract code claiming that any competent mechanic should be able to carry out directions if the plans and specifications are complete, and accurate. However, the contract does not provide directions on how to perform the work or what equipment to

use; this choice is left to the Contractor's discretion as long as he attains the necessary performance standard.

In summary,

- Contractor is responsible for equipment selection and equipment breakdowns.
- The contractor has requested compensation for weld repairs required by contract.
- Initial start-up contributed to delays and cost over-runs.
- The weld procedure qualification requirements in the Special Provisions did not cause the longitudinal seam cracking.
- Contractor's fabrication methods caused welding and HAZ failures, and equipment breakdowns, which have created project delays.
    - The long seam cracking is caused by low cycle/plastic fatigue due to excessive re-rolling after welding.
    - Weld repairs have been required to correct slag inclusions, cracks and other defects caused by the welders. KFM has not itemized these for exclusion from this claim.
    - The delays experienced with the long seam cracking were intensified by a lack of production and quality controls. All of the earliest cans with longitudinal seam cracking did not have the weld reinforcement removed prior to re-rolling even though this significantly reduced the number of cracks.
- The weld material meets the classification requirements of the contract, but was selected by the Contractor in contradiction to the recommendations in the "Guide for Welding HPS70W."
- The results of all testing of the HPS70W steel to date, including KFM's weld procedure qualification and their extensive testing program, meet all code and specification property requirements.
- Cracking has occurred after re-rolling in the weld itself or in the HAZ. Cracking at the weld toe and within the weld can be attributed to low cycle/plastic fatigue caused by excessive plastic forming cycles that greatly exceed the industry norm for rolling heavy plate. The remaining weld repairs are to correct workmanship problems, such as slag etc. The facts indicate that the cracks are a direct result of the fabrication means and methods used by the Contractor, not the choice of the plate material for the pipe beams.
- Other options have not been fully explored by the Contractor, including:
    - Cutting plate width in half and rolling more cans would require less rolling force and decrease the amount of cold working of the material.
    - "Warm" forming was selected by Struthers to form the cans. The location of the TBS's oven causes logistical difficulties in maintaining the temperature; although temporary furnaces could be constructed.

- Development of better heat management systems for production welding. (e.g. resistance strip heaters)
- Appropriate placement of welding beads avoiding vertical stacking.
- Avoid placing cap passes outside the weld joint.

DRB FINDINGS & CONCLUSIONS

PLANS & SPECIFICATIONS

1. Government Code Section 10120

The Contractor's position is that the Department did not comply with Public Contract Code 10120, which states, "Before entering into any contract for a project, the Department shall prepare full, complete and accurate plans and specifications and estimates of cost, giving such directions as will enable any competent mechanic or other builder to carry them out". KFM argued that the contract documents were not full, complete and accurate and since TBS was a competent mechanic the Department was liable for the extra costs of performing the contract work.

The Department maintains that PCC 10120 is not applicable since this contract is a seismic retrofit project and as a result the Streets and Highway Code Section 180 et seq applies which waives PCC section 10120 for seismic retrofit projects. As KFM's claim relies solely on the PCC there is no legal basis for its claim.

The DRB finds and concludes that the Department had an obligation to furnish complete and accurate plans and specifications for this project. The Department has not shown, and the DRB has not found, any reference in the contract documents to this project being a "seismic retrofit" project. Besides, there is no portion of the project that requires "retrofitting" any existing construction. Last but not least, absent a clear expression in the contract documents that this project is a seismic retrofit project, governed by the provisions of Streets and Highways Code sections 180 et seq., the Department impliedly warranted the adequacy of the plans and specifications.

It is the finding and conclusion of the Board that the contract documents, at time of contract award, were incomplete and due to the contingency of unknown conditions of completing the work, the Contractor is entitled to be compensated for any additional work required to complete the project.

2. Specification of HPS 70W Steel

The difficulties in performing the contract work appears to arise from the Department's choice of the specified material (HPS 70W) to be used in an unusual and apparently first-time application - taking 100mm (4 inch) thick plate and rolling (forming) it into 1900mm (6.23 feet) diameter cans, welding the longitudinal seam and then re-rolling the cans to form a circular shape to meet the extremely tight circularity

tolerances specified. The tolerances dictate the amount of re-rolling required - around 4 passes to obtain 9mm out of round and about a further 13 passes to obtain 2mm (maximum diameter less minimum diameter) as performed by TBS for the Department's rolling expert on November 10, 2005.

The DRB heard testimony that this was apparently the first time this high performance steel (HPS 70W), in plates of 65mm, 85mm and 100mm thickness, had been used in this type of application at the design radii indicated on the plans.

The DRB further finds and concludes that the plans and specifications pertaining to the fabrication of the HPS 70W hinge beams were defective in that they did not alert the Contractor that the HPS 70W steel had never been rolled into cans of 1900 mm diameter in the specified thicknesses and that the actual properties of this quenched and tempered steel would pose severe problems in the fabrication of the hinge pipe beams.

One consultant experienced in the design of tubular members for offshore oil platforms testified that normal practice before a new type of steel was used in tubular fabrication would be to have it "prequalified" as appropriate for that application before being specified. Such prequalification was not performed in this instance.

U.S. Steel, the supplier of the steel plate, in a letter to KFM on April 9, 2005, opined "that the cracking found is related to the amount of cold work induced into the steel plate and weld. The U.S. Steel properties card for the steel provided recommends that cold forming be restricted to a maximum thickness of 50mm."

3. Cold Rolling versus Warm Rolling

The Special Provisions at Section 10-1.44 STEEL STRUCTURES, Pipe Beams require forming to be performed at ambient temperature unless approved and qualified at elevated temperature, yet, AASHTO/NSBA, Steel Bridge Collaboration S 2.1 – 2002, at Section 4 -Workmanship, Para 4.3.1 states: "Do not cold-bend fracture-critical materials".

The Hinge Pipe Beams are specified to be fracture critical members yet the Board heard testimony that technically they are not but were specified as such by the Department in order to guarantee a quality product.

As stated above, U.S. Steel, the supplier of the steel plate, in its letter to KFM on April 9, 2005, opined "that the cracking found is related to the amount of cold work induced into the steel plate and weld. The U.S. Steel properties card for the steel provided recommends that cold forming be restricted to a maximum thickness of 50mm." AASHTO/ NSBA S 2.1-2002 "Steel Bridge Fabrication Guide Specification" does not permit cold bending of fracture critical materials.

The weight of evidence (and the benefits of hindsight) is perhaps that the 100mm (and 85mm) plates should have been warm rolled but since the specifications clearly preferred cold rolling to be performed (the specifications used the mandatory "shall"), and the Contractor, in complying with the specifications, had the right to rely on the indications given in the contract documents that cold forming would produce satisfactory and acceptable results. The Board heard evidence that warm forming the steel within the narrow band allowed in the specifications would increase the yield strength by only 12%. The Board heard considerable consultant testimony that warm rolling would have minimal, if any, beneficial effect to the rolling of the cans. .

The supplier of the rolls, Davi, indicated that the bearings were designed for only cold rolling, implying that different bearings would be required if warm rolling was subsequently used in the fabrication process.

The Board finds and concludes that any adverse effects produced by cold-rolling were precipitated by the Department's direction to form this material by cold-rolling.

INVESTIGATION OF THE METALLURGY & CRACKING MECHANISM

KFM, following extensive testing of samples taken from the HPS 70W product by Matthew Nousak of Middough Consulting Inc., concluded that the weld toe-cracking in the cans of 85mm and 100mm plate thickness was a combination of:

(1) The presence of a relatively hard shallow strain-sensitive layer at the plate surfaces that results from the quenching and tempering of the steel during the manufacturing process.
(2) The presence of an overmatching weld deposit.
(3) Significant strain hardening and aging resulting from cold forming, and thermal processing (welding, gouging, preheat) fabrication requirements of the cans.

KFM's consultants concluded that consequences of these phenomena were an increase in hardness, yield strength and tensile strength, a decrease in elongation and reduction of area, and an increase in the temperature of transition from ductile to brittle fracture at the surface and HAZ of the plate, resulting in cracking during and after re-rolling.

The Department's consultant (Dr Alan Pense) on the other hand concluded that the primary cause for cracking of the cans was low cycle plastic fatigue induced by fabrication processing due to the extensive rolling during forming.

Although believing them not to be primary causes the Department also found that toe cracking may have resulted from:

(1) Higher hardness zones at the plate surfaces.
(2) Weld/HAZ Hydrogen induced.
(3) Exhaustion of available toughness and ductility of the HPS 70W steel.
(4) Differential strengths of plate and weld metal.

Another KFM expert, Dr Robin Gordon agreed that low cycle fatigue may be a contributing factor but was not the primary cause. He concluded that although the 85 mm and 100mm thick plates received from U.S. Steel meet the tensile and Charpy properties of base material for the HPS 70W specifications they show variations in through-thickness tensile properties of 20% and higher yield strength at the surface. After rolling and aging the 100mm plate outer surface yield strength increases up to approximately 106ksi and the Y/T ratio increases to approximately 1.0. Initial rolling and welding exhausts the ductility of the base material and creates a low toughness HAZ microstructure. Local strains produced during final rolling in the low ductility HAZ microstructure are the primary causes of the cracking.

The DRB remains unclear as to whether the primary cause of the cracking is due to Low Cycle Plastic Fatigue or Exhaustion of Ductility. The DRB suspects that it is not entirely due to one or the other, but a combination of both with instances of some of the other potential causes, such as hydrogen induced cracking, all as discussed by the experts in their reports and testimony. However, the consultants for the most part concluded that the hydrogen induced cracking was not the likely culprit when considering the welding process, the welding material and the type of steel utilized.

Professor Peter Marshall, a consultant retained by the Department, indicated in his report, dated August 1, 2005, that while the HPB's have thicknesses in the typical range for warm forming (at stress relieving temperatures), the choice of material raises legitimate concerns over doing this. Further in his report in discussing tests to establish a precedent for re-rolling a seam weld up to 2.35 inches thick, 60ksi steel, and about 4% forming strain he indicated that the HPB's go beyond these parameters and that "with extrapolation comes surprises".

The Board finds that the fabrication problems were essentially the result of unanticipated material behavior actually encountered which could not have been reasonably anticipated by an experienced fabricator at time of bid.

As stated above, the DRB finds the contract documents to be defective, and that they, in addition to the findings made under "Plans and Specifications" above, did not limit the number of roll passes of the steel plates to achieve the required tolerances for roundness, did not require warm rolling to decrease cracking potential, did not deal with high hardness values induced by rolling and aging at the surfaces of the HPS 70 W steel plates and did not provide for alternative use of steel plate thicker than 4 inches.

FABRICATION

1. Rolling

Essentially, the Department believes that the toe cracking is due to low cycle plastic fatigue occurring during fabrication of the cans performed in accordance with the Contractor's means and methods. These means and methods included the election to "cold" form and not "warm" form the plate material, as optionally provided for in the

specification and as proposed by Struthers, the fabricator originally contracted by KFM. The cold forming required multiple passes to be performed in the re-rolling process, exacerbated – according to the Department - by the Contractor's purchase of Rolling Equipment which had insufficient capacity to perform the work without excessive rolling. The number of passes required in the re-rolling process were greater for the cold formed steel than would have been necessary for warm formed, thereby causing low cycle plastic fatigue in the HAZ.

Initially, TBS did not grind the seam weld completely flush to the base metal prior to re-rolling and the Department believes the rollers encountering this "speed bump" contributed to the development of the cracking. Following a meeting between the parties to address Weld Seam issues on March 9, 2005, a preliminary finding was to "remove additional reinforcement – grind weld smooth and flush prior to re-roll". The benefit of this would be to reduce uneven loading during re-roll. According to testimony this practice did not appear to reduce the amount of cracking and weld repair.

The DRB finds and concludes that, while many of the means and methods of fabrication are the responsibility of the Contractor (such as all steps of proper weld preparation, welding heat input management, good workmanship of welding, grinding of welds to proper smoothness, and good workmanship of weld repair), the nonexistence of any prior experience of rolling the HPS 70W steel in the specified thicknesses into round cans to tight tolerances as well as the extensive testing of the steel and the fabrication parameters, including the various suggestions and directives by the Department to change fabrication parameters, turned the fabrication of the hinge pipe beams into a "research and development project". This resulted in the Contractor performing work above and beyond the requirements of the contract. Such R & D activity, aided by numerous experts, is not the obligation of the Contractor but rather is the responsibility of the Department which specified steel that had not previously been used in the instant application. The Board also finds that the extensive testing and experimentation caused delays to the project that are the responsibility of the Department.

The State claims that the re-rolling of the cans after welding the longitudinal seam was a significant contributor to the cracking problem. The Board noted that not only was Struthers going to re-roll the cans after welding, but all the potential fabricators anticipated that re-rolling would be necessary after completion of the longitudinal seam welding in order to meet the tolerances specified.

Publications addressing forming of steel by rolling emphasize the importance that operators of the equipment have adequate experience in successfully fabricating tubular members. The Board finds that TBS provided personnel adequately experienced in rolling steel plates.

2. Rolling Equipment

TBS purchased a new set of forming rolls for the contract from an Italian manufacturer (Davi) –also known as Prom Au. The rolls were specifically designed to

roll 100mm thick HPS 70W steel to the required diameter (1900mm). This specialized rolling equipment was submitted to and approved by the Department.

During production there were some mechanical problems with hydraulic components and additionally some modifications were made to the equipment. Since the repairs and modifications were made to the rolling equipment the machine's performance appears to be satisfactory. Information provided at the hearing indicated that these repairs and modifications were extraordinary and above that anticipated by TBS and Davi from its historical experience.

The Department argued that the mechanical failures were due to overloading of the machine and that heavier and more powerful equipment should have been provided in the beginning. This would have resulted in a reduction in the amount of re-rolling required and low cycle plastic fatigue would not have occurred.

The steel plate as received from U.S. Steel satisfied HPS 70W property requirements. However, in the cold forming process, the I.D. and O.D. surface properties changed due to work hardening. For example, the Yield Strength of the surface material increased by as much as 23% so that the 70 Grade material behaved more like 100 Grade.

This sort of change in material properties, not anticipated by Davi or TBS, would presumably tax the equipment and at least result in additional re-roll effort. TBS claims (KFM letter 001393 of October 12, 2005) that much of the repair and/or modifications to the Davi equipment was necessitated by the unexpected behavior and characteristics of the HPS 70W steel such as the extremely high yield strength.

The Department asserted that TBS did not let State inspectors view the rolling operations and have access to the various rolling parameters. TBS responded that the rolling operation was proprietary.

The Board believes that the rolling equipment provided by TBS and approved by the Department should have been adequate to satisfactorily perform the work indicated in the contract documents.

The cost of parts, their installation, the costs of any modifications made to the equipment, as well as any delays to the fabrication of cans resulting from downtime to the rolling equipment would be to TBS's account, except to the extent any repairs and modifications were necessitated as a consequence of the unexpected characteristics of the HPS 70W steel.

Also, TBS should have granted the Department full access to the rolling operations and the rolling pressures and other data; the Department had a right to inspect the work in progress at an time, and TBS's contention of "proprietary rolling" was not appropriate and did not contribute to the resolution of the rolling problems.

3 Welding, Weld Metal

From the evidence and testimony, absent the cracking, the overall quality of longitudinal seam welds from a workmanship point of view was very good. There appears to be a paucity of Non Conformance Reports issued given the huge amount of weld metal put in place. However, the costs of repair of all defective welds resulting from poor workmanship should be the responsibility of the Contractor.

Initially, overmatching of the weld material with the base metal was thought to be a major issue although subsequently it was determined not to be. Nevertheless changes were made to the welding wire/flux combinations for both the longitudinal seam welds and weld repairs. The matter of welding/wire flux combinations does not appear to be an issue between the parties since the changes made were approved by the Department.

4 Trans Bay Steel – A Competent Mechanic or Builder

It was reasonable and appropriate for KFM to select and award the initial subcontract for supply of the hinge pipe beams to Struthers at the start of the contract. The selection of TBS as the substitute supplier with the bankruptcy of Struthers was also reasonable and appropriate under the circumstances. The Board finds that TBS with its management and employees qualifies as "a competent mechanic or other builder" with extensive experience in fabrication of steel products including tubular members. However, KFM bears the burden for any increased costs due to the difference in quotation/subcontract dollar amounts that may have occurred as a consequence of the Struthers default, as well as any delays which may have resulted from the substitution.

5 Tolerances

The roundness and alignment tolerances specified in Section 10-1.44 of the Special Provisions and various plan notes for the hinge pipe beams were extremely tight, necessitating a significant number of rolling and re-rolling passes to form the pipe beams within these tolerances. The tolerances were not acknowledged or conformed in the typical Section G-G on the various plan sheets for the hinge pipe beams. The specifications provided no minimum dimensions or thickness tolerances (i.e., plus or minus values) for either the HPS 70W base metal or the stainless steel cladding.

The specifications indicated, "Steel designated as Pipe Beam Grade 70 on the plans shall conform to the requirements in ASTM Designation A709, Grade HPS 70W..." which designates a maximum plate thickness of 4" (100mm).

Pre-bid question no. 204 asked various questions to clarify how these tolerances would be accommodated to conform to the fixed dimensions shown for the hinge pipe beams. Caltrans responded, "The base material (carbon steel) shall conform to Pipe Beam Grade 70 as specified in the Special Provisions. With proper equipment, tolerances can be met without machining the base material."

KFM's RFI 231, dated August 6, 2002, suggested using thicker HPS 70W plate to allow some excess steel to assist in achieving the tolerances including particularly the sections requiring stainless steel cladding. Caltrans' letter (428) of September 10, 2002 was not responsive in explaining how to reconcile or conform the tolerances with Section G-G dimensions. Caltrans chose to not authorize use of HPS 70W steel plate thicker than 4" which would have required a change order to approve the use of "HPS 70W Modified"steel.

A memorandum, dated September 19, 2002, by email from the State's Design Consultant and Steel Consultant to the Department explained the reasons for selecting HPS 70W steel and indicated that these plates could be produced up to 4-1/4" to 4-1/2" thick, although it would be called "HPS 70W Modified." "This mill designation should be acceptable."

The information in this memorandum was not shared with the Contractor until early 2004. The State's response to bidder question no. 204 and its failure to share the information in the September 19, 2002 memorandum in a timely manner resulted in denying the Contractor a viable option to assist it in meeting the required tolerances by incorporating the opportunity for additional machining as a part of the fabrication process. This could have potentially reduced the amount of rolling and re-rolling necessary to meet the specified tolerances.

TBS has asserted that Caltrans' interpretation that the maximum gap between the stiffeners and the cans cannot exceed 5mm and that this required the cans to be re-rolled to a greater extent than would have otherwise been necessary. TBS argued that the Department's interpretation exceeded the requirements of AWS D 1.5 – 96, paragraph 3.3.1 and the contract Special Provisions. However, the Board understood during the TBS shop tour that the stiffeners could be "match cut" to accommodate the roundness conditions at the location of each stiffener with its sophisticated computerized control system and this would appear to mitigate the TBS claim.

Contract Change Order No. 30 authorized payment for machining the base metal up to minus 5mm in order to assist the fabricator in retaining a minimum of 5mm of stainless steel cladding and meet the specified tolerances for these sections of the hinge pipe beams. This Change Order addressed the tolerance problem in the stainless steel cladding areas of the pipe beams, which in effect forced the base material to be formed by rolling to a tolerance 3 – 4mm out of roundness as a consequence of the restrictions it provided. Change Order No. 30 was accepted and executed by the parties. However, CCO #30 was executed in September 2003, before the first pipe section was rolled on June 28, 2004, well before the HPB fabrication problems manifested themselves. The Board concludes that, due to the unexpected HPS 70W steel behavior, any impacts arising from rolling or re-rolling with respect to the requirements of CCO #30 should be the Department's responsibility.

REVISION OF NOPC #11.

The State has objected to KFM's failure to provide a revised NOPC to reflect its concerns regarding 1) the increased tolerance restrictions due to CCO No. 30, and 2) expansion of issues beyond the specification PQR requirements due to overmatched and undermatched weld material and allegations that "The HPS 70W material as supplied and fabricated in accordance with Caltrans's Special Provisions does not appear suitable for the fabrication of the hinge pipe beams."

The original NOPC #11 dated September 30, 2004 was submitted to the State by letter of October 1, 2004. Extensive discussions, meetings, correspondence, testing and investigations have occurred between the Contractor, TBS, the Department and the parties' various consultants, regarding the problems of the fabrication of the cans for the pipe beams during the interim period. All these exchanges and efforts have developed extensive additional information about these problems which in the most part have been shared between the parties in a cooperative and timely manner. In light of the extensive involvement of all the parties in attempting to understand, mitigate and resolve the issues, the Board finds the original NOPC #11 was timely and adequate and that the State has not been prejudiced by a failure of NOPC 11 to be revised with regard to the pipe beam fabrication problems and their potential impact.

ACCEPTANCE CRITERIA

The fact that the Hinge Pipe Beams are not fracture-critical members and the longitudinal welded seams would be primarily subject to shear forces enabled the Department to ultimately reduce its acceptance criteria when TBS was at a point of virtually being unable to perform the contract work and meet the original quality requirements.

As a result of a modification to the acceptance criteria (compression and not tension) at the end of June 2005, acceptable product was able to be delivered. The Department testified that HPB cans have recently been produced that comply with the original acceptance criteria and that the TBS problems were a result of an extended learning curve and inadequate rolling equipment now performing since modifications have been made. KFM disputes this assertion by the Department and maintains that the fabrication quality problems would have continued if the acceptance criteria and various procedures had not been changed.

The Board is not persuaded by the Department's claim. The fact that this was a first time use of HPS 70W steel in this sort of application the Board finds that the material behavior problems could not have been anticipated by TBS at time of bid. TBS should have expected there to be a learning curve, however, what TBS has experienced goes well beyond any reasonable measure of a learning curve.

MITIGATING CHANGE ORDERS

The Department's issuance of contract change orders to aid in the resolution and mitigation of the pipe beam fabrication problems was proactive and well intended. They also indicate the Department's acknowledgement that many of the fabrication problems were reasonably beyond the Contractor's control.

Change Order No. 160 was issued to pay for certain repairs and modifications to the TBS fabrication procedures that the Engineer directed to be incorporated into the fabrication process for the hinge pipe beams. These modifications include "fabrication options (that) were not exhausted before stopping work." Much of this work was referred to in the hearing by KFM as "experiments" and included repair work procedures for cans previously fabricated, but not accepted as satisfactory by the Department. With reference to KFM's exhibit entitled "LIST OF EXPERIMENTS/SOLUTIONS," the Board notes that various modifications and alternatives to the TBS fabrication process of the hinge pipe beams were considered and implemented whenever practical from September 2004 to the present. The Board has concluded that limited improvement to the quality problems was realized from most of the proposed changes that could be implemented.

Contract Change Order No. 164 (per Caltrans' letter 5.03.01-8064) was issued to provide payment for premium pay due to Engineer-directed overtime in the fabrication of the pipe beams. Subsequently, this directive has been confirmed by Caltrans (letter 5.03.01-008381) to be a full acceleration directive for the TBS pipe beam fabrication work, directing TBS to work 24 hours, 6 days a week, on the fabrication of the hinge pipe beams.

Contract Change Order No. 165 was issued to confirm the changes in inspection and welding requirements for the longitudinal seam welds of the pipe beam cans (except for the fuse section). This change order eliminates the RT testing requirements and revised the UT test evaluation criteria to a compression standard, except for cans in the fuse section. Apparently, the relaxation of these requirements has had a significant and positive effect on the production of acceptable cans for use in the hinge pipe beams.

TBS FABRICATION, SCHEDULE INFORMATION

The State has requested additional schedule information from the Contractor to assist in its evaluation of the dispute. The Board concurs that the Contractor is obliged to fully cooperate in developing this information to the best of its ability. While it is recognized this information is important to the administration of the contract, particularly with regard to the acceleration directive and evaluation of quantum in this dispute, the Board believes the Contractor is attempting to fully cooperate to provide available schedule information and data and that these concerns do not directly affect determination of merit on this dispute.

DRB RECOMMENDATION

The DRB unanimously recommends the following:

(1) That the Department compensates the Contractor for all hinge pipe beam fabrication work, including weld metal experimentation and any delays occasioned by such fabrication work that were unexpected and unforeseeable due to the unknown and unanticipated behavior of the HPS 70W steel which had never previously been rolled into cans of the specified diameters using 65mm, 85mm and 100mm plate thicknesses.

(2) That the Department compensates the Contractor for repair of welds deemed defective under the "tension criteria" but acceptable under the "compression criteria". That the Department compensates the Contractor for the repair of ALL defective welds OTHER than those attributable to poor workmanship.

(3) That the Contractor be compensated for the testing and investigation of the steel in order to achieve the contract-specified results – such testing and investigation should have been performed prior to advertising of the contract.

(4) That the Contractor be responsible for the costs of repair of defective welds and any delays resulting from the repair of defective welds resulting from poor workmanship.

(5) That the Contractor be responsible for the grinding of longitudinal seam welds to appropriate smoothness in accordance with the specifications and code. Any additional grinding beyond these requirements would be the responsibility of the Department.

(6) Since difficulties in obtaining the specified tight tolerances were to be expected, the Contractor is to be responsible for all fabrication work required to meet such tolerances, except for additional work occasioned by the unexpected behavior of the steel and tighter tolerances resulting from CCO #30 and possibly from achieving the Department's required stiffener gap dimensions.

(7) That the Contractor be responsible for an appropriate learning curve absent the unexpected behavior of the HPS 70W steel.

(8) That the cost and expenses of work and delays caused by equipment breakdowns, and equipment modifications be the responsibility of the Contractor, except to the extent such breakdowns and modifications can be shown to have been necessitated as a consequence of the unexpected characteristics of the HPS 70W steel. In that regard the Board recommends that any delays in determining fabrication mitigation measures caused by the Contractor's refusal to share what it deemed to be "proprietary" rolling practices be the responsibility of TBS.

(9) That the Contractor be responsible for any increased costs due to differences in the dollar amounts between the Struthers and TBS subcontracts for the same scope of work, as well as any delays resulting from the substitution.

(10) That unless the Contractor can establish that the work stoppage by TBS was justified due to mixed directions, sample test results or other similar considerations at the fabrication site, the Department will not be responsible for the cost or time lost specifically due to the work suspension.

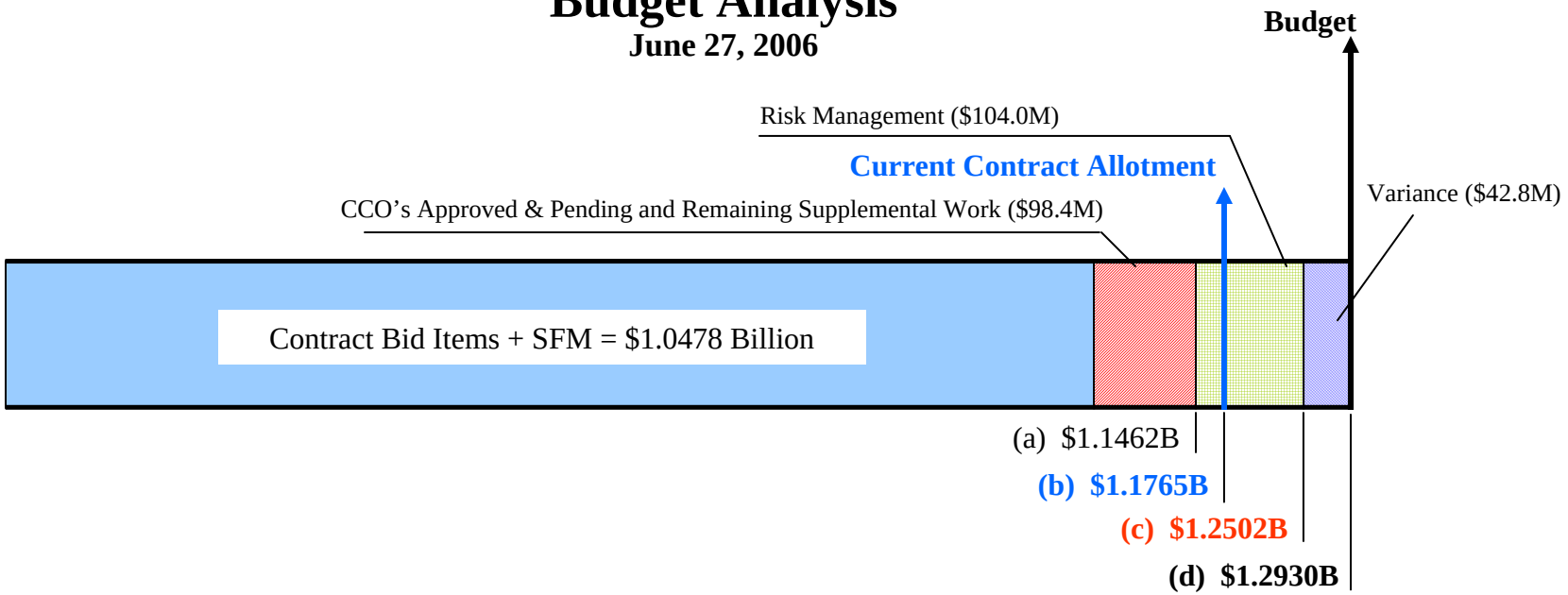
The Board makes no recommendations on quantum or extensions of contract time believing these are best determined and agreed to by the parties. However, in the event agreement cannot be reached these matters can be referred back to the Board under this dispute.

Respectfully submitted:

Warren M. Bullock	Frederick Graebe	Richard A. Lewis
DRB Member	DRB Member	DRB Member

Dated: January 26, 2006

Skyway Contract 04-012024
Budget Analysis
June 27, 2006



Contract 04-012024 Skyway
Current Contract Budget Funding Status
June 2006 Basis

Contract Bid Items	$	1,043,541,000	
State Furnished Materials (SFM)	$	4,276,439	
Subtotal	$	1,047,817,439	
Supplemental Work	$	6,565,700	
Contingency At 5%	$	52,616,861	
Subtotal Original Contract Allotment	$	1,107,000,000	
Supplemental Budget Allocation Approved	$	69,500,000	
Subtotal Current Contract Allotment	$	1,176,500,000	(b)
Remaining Unallotted Budget (Current Contract Budget - Current Contract Allotment)	$	116,500,000	
Total Current Contract Budget	$	1,293,000,000	(d)
Reported Total Forecast At Completion In 1st Quarter 2006 TBSRP Report		$1,293,000,000	

Contract 04-012024 Skyway
Contract Forecast At Completion (FAC) & Variance
June 2006 Basis

Contract Bid Items	$	1,043,541,000	
State Furnished Materials (SFM)	$	4,276,439	
Subtotal	$	1,047,817,439	
Supplemental Work Remaining	$	6,118,777	
CCO's			
CCO's (Approved (174) + Pending (44) = Total (218))	$	92,244,286	
CCO's = or > $1Million Pending POC's approval	$	-	
Subtotal	$	1,146,180,502	(a)
Risk Management	$	103,997,733	
Total	$	1,250,178,235	(c)
Variance (Total - Current Budget)	$	(42,821,765)	

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TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Memorandum

TO: Toll Bridge Program Oversight Committee (TBPOC) **DATE:** July 24, 2006

FR: Tony Anziano, Caltrans Toll Bridge Program Manager

RE: Agenda No. - 7a

Item- South/South Detour Contract Update

RECOMMENDATION:

For Information Only

DISCUSSION:

The South-South Detour (SSD) Contract remains active. Construction is finalizing the Contract Change Order (CCO) approved in concept by the Toll Bridge Program Oversight Committee (TBPOC) for delay to construction of the viaduct section of the contract. Viaduct fabrication has begun as the Contractor has transferred steel from the original Chinese fabricator, who declined to begin fabrication due to contract delays, to a Korean fabricator that has agreed to begin work on the project. A final CCO for the viaduct and delay to date will be brought to the TBPOC for approval within the next two to three months.

The Department has been meeting with the Contractor regarding a strategy for completion of the contract. The Department has assumed responsibility for design of the east and west tie-in work but has requested that the Contractor participate in this design work. The Department also requested that the Contractor prepare a rough estimate of contract completion costs assuming a new completion date of December 31, 2010 (this completion date is premised on

Memorandum

the current schedule for the SAS – the Department explained to the Contractor that flexibility would have to be maintained as any advance in SAS schedule would require an associated advance in the SSD schedule).

The Contractor has since provided a rough estimate of $162 million. This is $30 million above the currently approved budget but this must be viewed as a very rough number as no design exists for the tie-in work. A change order will have to be negotiated in the next few months to address the current situation.

Design work has begun on the tie-in work, and design squads have been developed to integrate this work with other work on Yerba Buena Island (the transition structure). The Contractor will be involved in this design effort. This will provide significant risk mitigation for one of the most sensitive elements of construction among all contracts – the east tie-in roll-out roll-in. Presence of the Contractor in the design effort will help address constructability issues. This is one of several reasons that support maintaining the relationship with the current Contractor.

Attachment(s):
None

AGENDA ITEM 8: Other Business

NO ATTACHMENTS